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RECENT ADVANCES IN THE TREATMENT OF CANCER.*

Isaac Levin, M.D.

New York City.

THE opinion seems to prevail that the reason for the inefficacy of the present therapeutic measures against malignant tumors is to be found in the lack of knowledge of the etiology of the disease. This assumption is not quite correct. It may be possible on one hand to obtain a correct remedy for a disease with an unknown etiology. Quinin for malaria and mercury for syphilis were found before the causation of these diseases was known. On the other hand no specific remedy was found as yet for tuberculosis, the etiology of which is quite clear.

Indeed the knowledge of the primary cause or origin of a disease aids mainly in the determination of the correct methods for its prevention. The methods for the prevention of cancer would differ widely depending upon whether the disease is of a parasitic origin or its primary cause is an abnormal cellular metabolism. On the other hand the correct therapy as well as the prognosis which are inter-related may depend not so much on the etiology as on the organ in which the cancer originally developed. Carcinoma of the lip, for instance, can be cured surgically in 83% of cases, while carcinoma of the liver is practically incurable.

The *pathogenesis, i. e.,* the mode of the development of a disease, may indicate the correct therapy though the etiology of the disease is unknown. The development of every malignant tumor is due to the unlimited proliferation of the cancer cell. This abnormal characteristic of a cell is responsible for all the clinical manifestations of the disease. The primary cause, which changes a normal organ cell into a tumor cell may be an intrinsic local or general abnormality of the organism or it may be a specific parasite. Such a parasite would either change only the nature of the first group of cells and remain *in situ,* or else it may multiply with the multiplication of the cancer cells and form a symbiosis with each newly produced tumor cell. At all events it is the tumor cell *per se* with its capacity for limitless proliferation which is responsible for all the manifestations of cancer.

The pathogenesis, *i. e.,* the mode of development of cancer, more than the lack of knowledge of the etiology accounts for the difficulty of obtaining a general specific remedy. A malignant tumor as stated above represents in final analysis an abnormality, a disease of a group of cells of a certain organ. Carcinoma of the breast is a disease of a group of the breast cells. All the secondary metastatic tumors also represent accumulations of groups of diseased breast cells. The specific remedy for the disease would have to affect deeply the abnormal breast cells and at the same time remain innocuous to the normal cells of the same organ as well as all the other normal cells of the organism. It will require years of further research in medicine and biology before a better knowledge will be obtained of the functions of the cell and of the nature, structure and functions of the endocellular enzymes. Only then will it be possible to find an antibody with such a fine adjustment that it will neutralize the abnormal proliferating power of the cancer cell and at the same time be innocuous to the other cell of the organism. The present method of crushing cancer tissue, embryonic tissue or normal organ tissue and injecting it into a patient or into an animal preparatory to obtaining serum, the methods of autolyzing cancer or normal tissue and injecting it into a patient represent extremely coarse and crude conceptions of the fine mechanism of endocellular functions. The same is true in regard to the various attempts at establishing a chemotherapeutic method for the treatment of malignant tumors.

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* Read by invitation at the meeting of the Medical Society of the County of Kings on October 19, 1915.

Thus for the present all attempts at obtaining a general specific therapeutic measure against cancer failed and all the recent advance in the treatment of the disease to be recorded consists in the improvement of the purely local methods of treatment.

Cancer as stated above begins with a local change in a group of cells of one organ. It then remains during a great part of its development a local disease, and even the secondary metastatic tumors begin in their respective regions as purely local processes by the growth of a minute group of transported cancer cells surrounded by normal tissue.

In view of this it seems reasonable to expect *a priori* that some results may be obtained by correct methods of purely local therapy. Indeed in recent years the progress in such local treatment was considerable.

The paramount method of local therapy consists in the *surgical treatment* of malignant tumors. A great deal of progress was achieved during the last two decades in the surgery of cancer. The modern surgical treatment is based on the fact that cancer spreads through the regional lymph glands. The surgeon strives to remove all the normal tissue adjacent to the malignant tumor and into which the latter spreads most frequently. The rule of modern surgery is also to make the incisions in the normal tissue as far from the tumor as safety will permit and furthermore to remove all the regional lymph-glands. By the aid of these methods which represent a very recent advance in the surgical treatment of cancer Halstead obtained nearly 40% of cures in carcinoma of the breast. Wertheimer reports that 50% of the operated cases of carcinoma of the uterus remain cured, Mayo states that 25% of the operated cases of carcinoma of the stomach are cured and so on. But notwithstanding this wonderful showing of operative statistics clinical experience shows that only a small minority of the cancer patients remain cured.

In order to obtain a true estimate of the actual percentage of all cancer patients cured by surgical treatment the writer has undertaken a comparative analysis between vital statistics and surgical statistics of cancer.

ORGAN	No. of cases reported by U. S. census 1900.	Percentage of cases of each organ.	% of cases operable for each organ.	% of cases cured by operation. High estimate.	% of cases cured by operation. Low estimate.	% relation of the cured cases of each organ to the whole No. of cancer cases. High estimate.	% relation of the cured cases of each organ to the whole No. of cancer cases. Low estimate.
Bladder	180	1 %	....	30 %	6.8%	0.15%	0.05%
Breast	1334	7.8%	....	38.8%	16 %	1.5 %	0.6 %
Head, Face and Neck	791	4.5%	....	83.8%	30.7%	1.8 %	0.75%
Liver	1784	13 %	....	....	....	1 %	0.15%
Mouth, Tongue & Throat	692	4 %	....	20 %	13 %	0.4 %	0.3 %
Rectum	574	3.3%	....	50 %	9 %	0.8 %	0.15%
Stomach	4220	24.3%	35%	25 %	3 %	2.1 %	0.3 %
Uterus	2291	13.2%	50%	50 %	10 %	3.3 %	0.66%
Abdomen	1107	6.4%	....	12 %	4.3%	0.4 %	0.15%
Not specified	4313	24.9%	....	....	....	3.8 %	1.04%
	....	....	....	....	....	15.25%	4.15%

The chart presented above was constructed in the following manner. The report of the U. S. Census in 1900 was taken as the basis of the present statistical analysis. In all there died of cancer in the registration area of the U. S. 17,286 men and women. The first vertical column of the chart shows how the cases were distributed among the various organs. The second vertical column shows the percentage relation of the number of cases in which a certain organ is involved to the whole number of cases of cancer in a certain unit of time.

In order to obtain a correct numerical estimation of the percentage of cases of cancer cured by a certain operation, the relation of the number of operated cases to the whole number of cancer patients must be calculated. The following vertical columns show the manner in which the figures were deducted. The third vertical column shows the percentage of cases of cancer in each organ which are considered to be operable when first examined by the surgeon. This very necessary statistical information is not always given in the published operative statistics. But since the percentage in carcinoma of the uterus and stomach is given in the published reports, the writer considered that the allowance of 50% of operability in all other organs and 100% in head, face and neck would give more than a fair estimate of the present operative results. Primary carcinoma of the liver is a very rare disease and as a rule carcinoma of the liver is always secondary to cancer of other organs, frequently carcinoma of the stomach. Again in order to be statistically more than fair to surgery the writer calculated carcinoma of the liver on the basis of carcinoma of the stomach. The fourth vertical column shows the percentage of cases cured by operation as reported by the best operator for the cancer of this particular organ. The writer considers this a high estimate, since comparatively only a small number of patients can be treated by these surgeons. The fifth vertical column shows the percentage of cases cured by operation as reported by surgeons possibly not so skilled. The ninth horizontal column—carcinoma of the abdomen—was calculated on the supposition that all the cases were carcinoma of the intestines, since these cases give the best operative results. Sixth and seventh vertical columns show the percentage relation of the cured cases of each organ to the whole number of cancer cases. The figures were obtained by multiplying the figures in the fourth and fifth vertical columns by the fraction representing the percentage of cases of each organ. The last two figures of the sixth and seventh vertical columns were calculated in the following manner: Not specified cases of cancer must have belonged to one or the other organ. All the other figures in each of the two columns were added and the sum represented the high and low estimate respectively of the percentage of the ¾ of all the cases of cancer. One-third of this sum gives the percentage of cases of cancer, in which the organ was not specified in the vital statistics and which would have been cured by surgery. The not specified cases represented 24.9% or roughly ¼ of all the cancer cases. The sum total under the sixth and seventh vertical columns shows the high and low estimate of the actual percentage relation of the cured cases of each organ to the whole number of cancer cases. It shows that as a high estimate 15.25% and as a low estimate 4.15% of all cases of cancer can be cured by surgical treatment. Even on the supposition of the unattainable ideal, that instead of 50% all the cancer patients should come to the surgeon in the operable state and all the surgeons should possess the skill of Wertheim, Halstead, or Mayo, not more than about 30% of all the cancer cases could be cured by surgery. At present rather less than 10% of all cases are cured by surgery. It is also safe to assume that there can hardly be expected any further progress in surgical treatment of malignant tumors. The latter are usually situated in close proximity to the vital organs, the injury of which would endanger the life of the patient. There is consequently set a limit to the length to which a surgeon may go in removing the normal tissue adjacent to the tumor. As a result there may remain small islands of cancer cells in or near the operating field even after a most radical operation on a favorable, operable case. For the same reason the knife may inadvertently cut into such an island of tumor tissue and throw freed cancer cells into the opened lymph and blood channels. The malignant tumor will then recur in the same or at a distant region. The second reason for the failure of radical operation and the subsequent metastasis formation in some distant organ consists in the fact that even in the early operable stage of the disease there may be present minute tumor nodules in the distant organs which cannot be detected by any diagnostic means at our command, but which after the operation develop into large metastatic tumors.

In order to obviate some of the shortcomings inherent in the operative treatment of malignant tumors there were devised in recent years different so-called *electric methods of operating*. The main principle of all these methods consists in their destruction of tumor tissue *in situ* by heat which is produced by the action of the electric currents. Some investigators claim that a certain degree of heat may coagulate and destroy all tumor tissue while leaving the normal tissue intact. It is hardly possible to accomplish this, and the real advantage of these electric methods of coagulation of malignant tumors consists in the fact that the lymph and blood channels remain unopened while the tumor is destroyed. Consequently no operative dissemination of tumor particles takes place. The methods are of greatest value in cases on the border line of operability or inoperable cases, in which the main mass of tumor is removed as a preliminary to subsequent radiotherapy.

The best apparatus devised for the purpose are the so called *diathermic* machines. A diathermic apparatus is a high frequency machine with a much smaller voltage than the usual types and so constructed that there may develop in the tissue between two electrodes any desired degree of heat. The rise of temperature may range from a fraction of a degree to a heat sufficient to coagulate tissue. A number of types of diathermic apparatus were constructed in France and Germany. The writer has devised an apparatus which differs from European patterns in as much as it is so constructed that the same machine can be used for diathermy and all the other modalities of the high frequency current.

Diathermic coagulation, while superior to the knife in a certain class of cases, is also capable of destroying only the gross tumor.

Another method of treating cancer recently developed seeks to destroy the small islands of cancer tissue which the surgeon left either in the operative field or at a distance. This is the method of *radiotherapy* or treatment by the aid of X-ray or the rays of radium and the other radioactive substances.

Some rudimentary knowledge of the physical properties of these rays is indispensable in order to appreciate their therapeutic value. Rays emitted by a roentgen tube or by radio-active substances, are in many respects analogous to the rays of light. The difference between the two kinds of rays consists in the fact that the waves of ether forming the X-rays are considerably shorter than the shortest ultraviolet waves of light. The waves of the so-called soft roentgen rays are about one thousand times shorter than those of ultraviolet light, and the waves of the hard roentgen rays and gamma rays of radium are still shorter.

In accordance with the modern conception of the structure of matter an atom consists of a large nucleus charged with positive electricity, surrounded, like a planet by satellites, by two circles of negatively charged electrons. An electron is the smallest unit of matter known today and is at the same time apparently an independent unit of electricity; in other words, it is something which links together matter and energy. The minute spaces between the atoms contain the hypothetical ether, which is supposed to penetrate all space in nature. When a wave of ether is short enough to penetrate between the atoms (*i. e.,* hard roentgen rays), it sets in rapid motion a certain number of electrons and thus creates secondary cathode rays. The rapidly moving electrons, on the other hand, create new waves of secondary roentgen rays. Very recently Rutherford showed that the gamma rays emitted by radium may be regarded as secondary roentgen rays produced in the radium by the action of beta particles; *i. e.,* electrons. The characteristics of the secondary roentgen rays depend solely upon the velocity of the primary cathode rays and the atomic structure of the substance exposed to the primary roentgen rays. The character of the secondary X-rays will be the same, for instance, whether the primary X-rays penetrate a certain metal or a solution of a salt of the same metal. This conception of the structure of matter and the nature of the roentgen and gamma rays makes clear the importance of the three main characteristics of the rays; namely, the *penetration*, the *absorption*, and the *selective action*. The hardest X—or gamma—rays, *i. e.*, shortest waves of ether, penetrate between the atoms of matter without affecting the substance in any manner. The soft rays, *i. e.*, longer waves of ether, are unable to penetrate between the atoms of the substance and are dispersed over its surface and again produce no effect on the latter. Only when the relationship between the atomic structure of the substance and the wave length of the X-rays is correct does there take place a selective absorption of the rays by the substance, and the latter is then influenced by the rays.

When a plant or animal body is exposed to the action of roentgen or gamma-rays there probably take place the same atomic disturbances in the cells of the body as in a piece of metal or any other unorganized substance. As a consequence the rays injure the protoplasm, or more frequently the nuclei of the cells. This biological action differs quantitatively in accordance with the amount and character of the rays absorbed by the cells and the specific susceptibility of the latter to the action of the rays. When slightly injured the cell may completely recover, while if the injury is severe the cell dies. All the tissues of the organism may be killed by a sufficiently large quantity of rays. Nevertheless the biological action of the roentgen rays must be considered selective, inasmuch as quantities of the rays sufficient to kill a certain kind of tissue may leave adjacent tissues intact or only slightly injured. In order to obtain this selective action the rays must be distributed as evenly as possible through the organism, so that only a comparatively small quantity of the rays will reach each individual cell. On the other hand, a sufficiently large fraction of the rays must reach as far as possible from the surface of the body. Such a distribution is possible only with the hard rays, whose penetration is much greater than their absorption.

The cells of malignant tumors are more susceptible to the action of the rays than the cells of normal tissues surrounding the tumor. If the rays employed are of a correct quality and in a sufficient quantity it is possible to destroy all the cancer-cells in a certain locality and at the same time leave the normal tissues either intact or so slightly injured that they ultimately completely recover.

The best proof of this assertion can be seen in the results of the treatment of ulcus rodens by radium. The writer treated several cases in which the ulcer was smaller than the tube of radium employed. Only a part of the tube covered the ulcer, the rest of the tube lying just as closely to the normal skin. The normal skin was not injured or even irritated in any degree, while the ulcer was healed. This indicates sufficiently well that the radium employed with the modern technique does not act as a simple caustic, but has a selective action on the tumor-cells.

The action of the rays on a malignant growth consists primarily in the destruction of the tumor-cells and subsequently the formation of sclerotic connective tissue which compresses and destroys the remaining tumor-cells.

It is as yet difficult to obtain a true valuation of the significance of radiotherapy in the treatment of malignant tumors. The modern correct methods have been in use a comparatively short time and the majority of cases in which they are employed are the most advanced forms of the disease. Nevertheless, as will be seen later, the results obtained are very significant and promising.

In order to get a better estimate of the results obtained by this method of treatment, the writer made a statistical analysis of the cases reported during the last two years and compared them with his own cases treated during the same period of time.

Of the very extensive literature on the subject only those reports were selected in which the whole number of cases treated in a certain clinic were given and not the selected favorable cases only. The accompanying chart presents graphically the result of the analysis.

SURGEON	No. of patients treated	Organ	Died	Discontinued treatment	Became worse	Not improved	Improved	Became operable	Clinically cured	Operable cases
Doederlein..................		Uterus	.	....	..	..	54	..	..	35
Chevron & Duval	150	"	..	....	..	2	110	12	34	2
Allman.....................	85	"	15	....	..	..	15	20	..	..
Wertheim..................	102	"	23	....	8	21	31	19	..	21
Guisez......................	35	Oesophagus	..	....	..	..	....	..	3	..
Werner	314	Various	..	....	..	..	64	..	..	..
Pinsch......................	196	"	21	19	..	52	95	..	9	..
vonEiselsberg.............	48	"	11	18	7	1	5	..	6	..
Schnitz.....................	23	"	..	....	..	19	2	..	2	..
Levin	41	"	13	11	..	14	1	..	2	..
Total.................	1002	....	...	....	...	...	...	51	56	...

The report of Doederlein's clinic is given, though the whole number of treated cases is not indicated, in order to show that a man of his clinical experience undertook to treat 35 operable cases with radiotherapy alone. But his cases are not included in the total calculation of the figures.

Chevron and Duval state that a certain number of their cases remain cured after four years. They also report that of the 51 cases of carcinoma of the uterus which became operable in many of the subsequently extirpated uteri no carcinoma cells were found. Guisez reports that two of the three cured cases of carcinoma of the oesophagus remain well after two years. Von Eiselsberg and his school are very cautious and even pessimistic in their valuation of radiotherapy and still they report six clinically cured cases out of a total of 48 inoperable cases, or 12 per cent of the cases treated.

The chart shows a total of 1,002 cases. Of these 57 cases were clinically cured and 51 cases become operable. There are reported in all 58 cases treated by radiation alone which were in an operable stage. Of these 35 cases belong to Doederlein and were not included in the calculation. The 21 cases of Wertheim must be deducted from the sum total of cases treated but not from the clinically cured cases, since Wertheim does not give the number of clinically cured cases. The two operable cases of Chevron and Duval must be deducted both from the sum total and the number of clinically cured cases. There remains a total of 979 cases of which 54 are reported clinically cured. Of the 51 cases which became operable at least 25 per cent, or 13 cases, must have also become clinically cured. This gives a total of 67 cases or 6.7 per cent clinically cured. These figures are similar to those reported by the writer, which are shown in the last line of the chart.

A therapeutic method which is capable of producing a clinical cure in 6.7 per cent of a total of 979 inoperable cases of malignant tumors is by far superior in its efficiency, as well as the number treated, to any therapeutic measure which was ever offered for this class of cases.

But these numerical results do not indicate the full value of this method of treatment.

The post-mortem study of a case of carcinoma of the sigmoid which was treated for six months with X-rays indicates clearly the value as well as the limitations of radiotherapy in the treatment of malignant tumors. An exploratory laporatomy was done on the patient which revealed a carcinoma of the sigmoid and a peritoneal dissemination with minute metastatic nodules. The case was declared to be inoperable and the tumor was not removed. The patient died six months later from intestinal obstruction.

The following points of importance may be adduced from the analysis of the case:

Notwithstanding the continuous very large doses of roentgen rays, there was no injury to the skin, serous or mucous membranes, lymphathic glands, or parenchymatous organs. At the same time the islands of tumor-cells in the peritoneal nodules were either completely destroyed and replaced by dense fibrous connective tissue or surrounded by the connective tissue and inhibited greatly in their growth. In over six months not a single one of the innumerable minute nodules found at the operation developed into a large metastasis. The original sigmoid tumor did not increase in size during the time. It is thus self-evident that the rays exerted a specific deleterious effect on carcinoma-cells, in the same quantity which left the rest of the organism intact. On the other hand, this selective action has its distinct limitations. By analogy with recent physical studies on selective absorption of X-rays by various metals it seems feasible to suppose that the selective active action of X-rays and gamma-rays on a tumor is due to a greater absorption of the rays by tumor tissue than normal tissue. As a result, less of the rays penetrate into the next layer of tumor tissue than would have been the case if normal tissue were interposed between this layer of tumor and the rays. This difference in the mass of tumor offers the only explanation of the fact that the deeper part of the sigmoid tumor, which was hardly more than 5 cm. from the skin, was not influenced by the rays, while the tumor islands in the peritoneal nodules, some of which were situated at a many times greater distance from the skin, were either destroyed or deeply influenced by the rays.

Two conclusions of great practical importance may be drawn from the analysis of this case: First it seems plausible to suppose that if at the operation the primary tumor had been removed and the radiation applied only to the peritoneal nodules a recurrence might have been prevented or delayed for a long time. This clearly indicates the importance of *combined surgical treatment and radiotherapy* of malignant tumors. The gross tumor should be removed surgically even when a radical operation cannot be performed, then the small islands of cancer tissue may be destroyed by raying at a great distance from the skin; *i. e.*, even a metastasis may be influenced by the rays at its incipiency. This leads again to the second important conclusion to be drawn from the analysis of this case; namely, the importance of prophylactic treatment. Prophylactic postoperative radiotherapy has not been employed long enough and on a sufficient number of cases for a correct statistical estimation of its value. But the case reported above indicates that minute nodules may be influenced by the rays at a great distance from the skin. Consequently a systematic prophylactic radiation must destroy all the minute groups of tumor-cells transported immediately before and during the operation. It will fail in those cases in which there existed already at the time of the operation large secondary metastatic tumors.

It would be out of place to describe here in full the correct methods of radium and roentgen therapy and the proper combination of both, and of the correct methods of combination of radiotherapy with surgery. Those interested may find complete description of the technique of radium and X-ray therapy as employed by the writer in his previous publications.

Correct radiotherapy implies a thorough understanding of the pathological and clinical condition of the patient as well as of the technique, dangers, and limitations of the therapeutic measure. The great success of radiotherapy in Germany dates from the time when the surgeons and gynecologists themselves undertook this method of treatment instead of referring the patients to the radiographers. The future success of the whole field of treatment of malignant tumors depends upon a very close cooperation between the radiotherapeutist, surgeon, and pathologist.

SYPHILIS OF THE CENTRAL NERVOUS SYSTEM, AND ITS INTENSIVE TREATMENT.

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WITH the advancement in the laboratory studies of the tissues and fluids of the central nervous system—the brain, the cord, their membranous coverings, and the spinal fluid—has come the establishment of the fact that paresis, tabes and other essentially nervous disorders are expressions of an active true luetic process and not the mere aftermath or sequelae of a previous controlled or latent infection. The findings of Noguchi and Moore ([1]), and the Levaditi method of tissue staining for the spirocheta attest this. Certain deviations from the normal in the serological reactions of the cerebro-spinal fluid uniformly occur in luetics. They may occur even before clinical evidence of central involvement is manifested—often years before. These changes consist of:

(*a*) a pleocytosis—an increase in the normal cell content of the fluid of from 3 to 5 cells per c.mm. up to 1,000 or more—chiefly of lymphocytes.

(*b*) a reduction of Fehling's Solution.

These two reactions denote a long continued irritation and may not be present in an acute meningeal involvement.

(*c*) the presence of protein (not normally found in the fluid) as shown by the Noguchi globulin test.
(*d*) the presence of a positive Wassermann reaction titrated up to at least three dilutions.

These reactions constitute the Four Phases of Nonne.

Just how early and in what percentage of cases the central nervous system is involved, is as yet difficult to determine. Clinicians vary in their observations. Robertson and Klauder,(2) and others hold that within a few days of the appearance of the initial lesion there is present a general septicemia; that even at that early period the organism is carried to all portions of the body including the central nervous system. To them every case of lues is potentially one of central nervous system involvement. A certain amount of clinical evidence seems to lend support to this claim. J. S. Reed reports a case of acute brain syphilis occurring within two weeks of the appearance of the primary lesion. Back in 1849 Knorre cited five cases of constitutional syphilis in three of which paralysis occurred within three months after infection. (3) Nonne has observed cerebral syphilis four months after infection. Mott (Syst. of Syphilis) has observed meningitis before the healing of the primary sore, and claims that the most severe cases of central nervous involvement occur within the first twelve months. Naurryn, from an analysis of 254 cases, concluded that infection of the nervous system occurred in the majority of cases during the first year. Braus showed from the statistics of 100 cases that in nearly one-half the nervous system was involved during the first year. In Fournier's clinic 26 cases were shown to develop within three to six months after infection. Several found that out of 77 cases of myelitis, 26 appeared from six to eight months after infection.

The laboratory has demonstrated an even earlier and higher percentage of involvement. Ravaut (4) in a systematic examination of the spinal fluid in secondary syphilis found advanced changes in about 70% of the cases. Altman and Dreyfus (5) found serological changes in 80% of the secondaries. Gemmerich got positive findings in 90% and believes that after a provocatived dose of Salvarsan all early constitutional cases will show a pleocytosis and increased globulin content. Of course, not all of these cases show symptoms of brain or cord involvement; or they may be very slight, or transient.

The question arises—Why do not all untreated or insufficiently treated cases of constitutional syphilis sooner or later present obvious symptoms of central nervous involvement? The answer at present is largely a speculative one. It has been offered, for instance, that varying strains of the treponema have varying selective actions,—that certain strains of the organism have a predilection for the nervous system, while others exert their actions elsewhere. Ravaut and others have noted that those cases with the most intense roseola in the second stage are least likely to present concomitant or subsequent brain or cord involvement. According to Fournier, "If the virus extends itself in severe primary or secondary manifestations there is less tendency to parasyphilis." The reverse of this has been even more generally observed. Again, the factor of individual resistance must be brought into consideration. In some individuals resistance to the activities of the organism may be developed to a greater degree in the nervous system than in the cutaneous, vascular, or other system. However this may be, involvement of the central nervous system does occur in a sufficiently high percentage of cases of luetic infection to stimulate a study of a therapy that will be at once *efficient* and *safe*. That we appear to be on the right road and headed in the right direction at the present time is evident from the reports found in the current literature for the past two years. The repeated subarachnoid injections of auto-salvarsanized serum, plus the administration of mercury and potassium iodide constitute the so-called modern intensive treatment of a group of cases heretofore universally considered doomed from the start and in that light abandoned. Viewed from that light modern therapy is yielding more than satisfactory results, but there is yet room for much advancement.

Syphilis of the central nervous system comprises not a few types; differing widely one from another clinically, reacting just as widely to treatment,—some cases showing marked improvement, others none at all. To come to a better understanding of the conditions, a classification of the types upon a pathological basis is helpful. Riggs and Hammes (6) divide nervous syphilis into two main groups, degenerative and non-degenerative. In the latter they place the gummas, diffuse gummatous infiltrations of the meninges, infiltrations around the blood vessels of the brain and cord, and syphilitic endarteritis. In the former they place those types arising from a primary degeneration in certain groups of neurons; namely the exogenous fibres of the posterior columns in tabes, and the cells of the cortex, with the interconnecting tangental fibres, in paresis. In both forms the lesions are due to the direct action of the Treponema pallida on the affected tissues—nervous or non-nervous. In the second group a very great deal may be accomplished in the way of therapy, up to a complete restoration of health. The prognosis for the first group depends largely upon the amount of damage that has been done before treatment is instituted. "A neuron once degenerated is hopelessly destroyed." In such a case the most that can be done is a checking of an extension of the degenerative process to other neurons. This accomplished, the remaining healthy neurons appear able to take on some of the functions of the lost ones in addition to their own. In this way may be explained the improvement that takes place in cases of tabes and paresis where treatment has been instituted early enough. The time element is therefore the chief factor to be reckoned with from a prognostic standpoint in these degenerative types.

Efficiency in therapy rests then largely upon a consideration of the particular type with which one has to deal. The lesions of the second group—the non-degenerative—are apparently of haemotogenous origin. It is reasonable to expect then that a drug or its products in the blood stream by being carried directly to the lesions may act directly upon them. Such seems to be the case, for repeated intravenous injections of salvarsan together with the administration of mercury and the iodides secures a fairly prompt restoration to the normal in these cases. In the first group—the degenerative—one meets with a different proposition. The primary atrophy of a neuron either in the brain or cord is not of haemotogenous origin. It is probably of *lymphatic* origin. "The problem is to dislodge the treponema from the poorly vascularized region of the brain and cord," says Ogilvie. The *choroid plexus* presides over the lymphatic supply of these parts. It has been demonstrated by Tilney, Woolsey, and others that the choroid plexus is not a membrane of passive properties allowing fluids to filter through by a process of osmosis; but that it is a functionating organ of active properties and of a highly selective degree. Flexner in his work on cerebro-spinal meningitis and on anterior poliomyelitis, (7) Lamar, (8) on pneumococcus meningitis; and Wallstein, (9) hold that these diseases can be controlled only by sub-arachnoid approach. The choroid plexus apparently does *not* permit the passage of salvarsan or its products from the blood stream into the sub-arachnoid space. Hence, whatever curative properties such a serum may possess, they are not exerted upon the lesions themselves. It was to overcome this condition that Swift and Ellis devised the method of introducing serum, which had been previously salvarsanized, directly into the sub-arachnoid space by lumbar puncture. Briefly, the technique is as follows: the patient is given an intravenous injection of an adequate dose of salvarsan; from 20 to 30 minutes later about 50 c.c. of venous blood are withdrawn; this is put aside in a cool place over night and the serum allowed to separate from the clot; on the following morning 12 c.c. of the clear serum is pipetted off and added to 18 c.c. of freshly prepared normal saline solution, and inactivated at 56°c. for one-half hour. Inactivating accomplishes two things; (*a*) increases the spirochetacidal properties of the serum, and (*b*) destroys complement in the serum—there being no complement in normal spinal fluid. Lumbar puncture is then performed on the patient, 30 c.c. of the spinal fluid removed (upon which the various serological tests are done) and 30 c.c. of the 40% solution of salvarsanized serum—which has been kept at body temperature—are introduced through the needle by gravity. The patient is then placed in a moderate Clark posture for six to eight hours. It is advised that these treatments be repeated every two weeks, supplemented by the administration of mercury (preferably in the form of the salicylate by deep intramuscular injection) and K.I., until the serological findings in the blood serum and spinal fluid are normal. Since the introduction of the Swift and Ellis technic, many modifications have sprung up, such as the direct injection of neosalvarsan and salvarsan in solution in saline, or in mixing either in blood serum "in vitro." The administration of salvarsanized serum made up in vitro was attempted in 1912, by Wechselman, and in 1913, by Marinesco, Levaditi, and Marie, with many serious results. Later, Ravaut reported a successful series of direct injections of neosalvarsan into the spinal canal (10), and his technique was followed out in this country by Wile (11). The latter was gratified with his result, but a review of current native literature fails to reveal any extended support to his findings. Most observers find the method to be altogether too irritating, if not actually resulting fatally. Of the deaths reported in the treating of these diseases, all have occurred where the direct "in vitro" method has been employed. No fatal case has yet been reported where the Swift and Ellis technique has been faithfully carried out. Ogilvie, of New York (12), has produced, perhaps, the safest of the "in vitro" methods. Yet he uses infinitesimal amounts of salvarsan, and admits that the use of more than 0.01 gms. is attended with dangerous irritative reactions.

The Swift and Ellis technique has been considered inadequate by some on the ground that the serum prepared accordingly contained too little salvarsan to effect much curative action. But the effectiveness of the serum may not depend necessarily on the pure salvarsan content. Erlich, himself, is sponsor for the statement that the efficiency of the arsenical therapy depends not so much upon the salvarsan as upon a third product formed by the action of the salvarsan upon either the serum or the tissue cells. This "third product" may be elaborated in sufficient quantity to provide a suitable dose for a single subarachnoid injection. However, one may try to account for or against it theoretically, the fact remains, that cases of the degenerative type—when taken in time—do improve clinically and serologically under the Swift and Ellis method and without the dangerous reactions of the more radical methods.

Because we believe that auto-salvarsanized serum prepared "in vivo" and administered in the manner outlined by Swift and Ellis combines the most *efficient* method of therapy together with the *safest,* I have employed it in a small series of cases it has been my privilege to handle at the Methodist Episcopal Hospital. We have departed from the original technique only in so far as we have used larger quantities of more concentrated solutions of the serum. I have had no untoward results.

My cases, while not very large in number, present a sufficient variety in type to prove of interest in study. Serologically, the results have been most variable. The pleocytosis has been markedly reduced after the first treatment and kept so thereafter. With successive treatments the amount of globulin is gradually reduced. The Wassermann reaction tends to remain the longest—often early becoming negative in the blood though persisting positive in the spinal fluid. Treatment should be continued until a negative return from the Four Phases of Nonne is obtained, indicating a restoration to the normal.

Clinically, the results are more encouraging. Practically, all of the cases have improved symptomatically—if not in all respects, at least in the majority. As might be expected, the cases taken in hand earlier have given the better results. A consideration of the individual subjective symptoms will best illustrate the points.

General Nutrition: All the cases have shown a very considerable gain in weight and strength. All the patients declare that they "feel much better" than they have felt in years. A gain in weight of from 10 to 40 lbs. has been the rule.

Pain: In all cases pain has been markedly lessened, and in most absolutely controlled. From this statement must be excepted the pains that occur immediately following the spinal administrations, which, though intense, are brief in duration and leave the intervals, as before mentioned, singularly free from their manifestations. When it is realized that the lightning and critic pains of tabes are among the most violent and constant known to medicine, this, in itself, is an accomplishment.

Ataxia: To effect an improvement in this condition requires, more than does any other symptom, an early application and persistant re-applications of treatment. When existing for any number of years prior to the starting of treatment but little improvement has been noted.

Headaches and Vertigo: Both controlled.

Paresthesias: Very much improved.

Constipation: Regularly relieved.

Vomiting: Absolutely controlled; as in case of acute brain syphilis.

Bladder Disturbances: Early cases are improved. Late cases are not helped; some have been made worse temporararily.

Sexual Power: Improved.

CASE REPORTS

Case I: Mrs. T., age 54, widow, housekeeper.

Married at 27 years. No children, no miscarriages. No history of previous serious illness. Had always done heavy housework. Husband died in *1910* of "Heart and Kidney disease."

Present illness dated from time of husband's death when she suffered a "complete nervous breakdown." During this time her appetite failed, she lost a great deal of sleep, her hair began to fall out and she lost considerably in weight and strength. Shortly after she noticed the development of slight shooting pains down her thighs and through her body. These pains gradually increased in severity and in frequency. In *May, 1911,* she suddenly lost the use of her right forearm. This condition lasted for about one year, during which time the muscles of her right hand and forearm showed marked atrophy. In *May, 1912,* while doing housework in an institution she was taken with a chill that lasted for two nights and there immediately developed a sense of numbness in the calf muscles of the left leg and in the instep of the right foot. An atrophy of the calf muscles of the left leg then followed. In *November, 1912,* patient says she broke down again. Onset here was very sudden, She "walked in a curve"—could not walk straight, though she had no attacks of vertigo. She could not stand up with her eyes shut. She then noticed the development of a constricting sensation around the waist line, between the shoulders and around both thighs, especially the left. The padding of the soles of the feet sensation then appeared and progressed to a marked degree. For the following six months bladder disturbances became prominent. Only by exercising the greatest watchfulness was she able to control her bowel movements. She had sensations as though her rectum was continuously greatly impacted. Many of these symptoms subsided later, but the ataxia, paresthesias, and pain steadily grew worse.

She entered the Methodist Episcopal Hospital in the latter part of *November, 1913.* At that time Dr. Tilney examined her and made a tentative diagnosis of tabes dorsalis. The spinal fluid was examined on *November 30, 1913,* and gave the following results: Fluid clear; cell count, 3; Butyric acid test for globulin, Neg. Wassermann (Noguchi) on both blood serum and spinal fluid, Neg.

On *January 24, 1914,* following a provocative salvarsan administration, a weak positive Wassermann (original or "long" method) was found in the spinal fluid in all dilutions, though it remained negative in the blood. From *January 28,* until *March, 26, 1914,* she received four intra-spinal treatments of salvansanized serum. The immediate reactions were always severe, the patient complaining of a great accentuation of the darting pains in her legs. She recovered from the immediate effects in each case in from 24 to 48 hours. She showed marked and steady improvement from the start. In the intervals she became entirely free from pain. The condition of ataxia steadily improved. When I last saw her (Nov., 1915), the romberg was absent. Bladder and bowel control was normal. Knee jerk and pupillary signs were normal.

Serological Record for Mrs. T.:

Date	Serum	Spinal Fluid					
		.25	.5	.75	Cell coun	Globulin	Fehling
Jan. 28, 1914	—	+	+	++	3	None	Reduc'd
Feb. 26, 1914	—	—	—	—	15	Present	"
March 12, 1914	—	—	—	—	3	Slight trace	"
March 26, 1914	—	—	—	—	6	Slight trace	"
April 6, 1914	—	—	—	—	4	Present	"

CASE II: Mr. W., age 45, married, salesman. Father died of cancer of the face. Mother still living. Chancre 18 years ago. Circumcised at the time. Positively denies any secondary manifestations. Claims to have been perfectly well ever since.

About five months prior to admission to Methodist Episcopal Hospital patient noticed the development of a weakness in the left knee joint. There was no pain associated with this weakness, just a feeling of numbness and loss of life and power in the part. About two months later the same sensory disturbances appeared in the right leg, though the right knee joint remained stronger. Steadily the motor control over both lower extremities became markedly impaired. Locomotion at the time of the patient's admission was extremely difficult. The gait was spastic. A Wassermann test done at the Brooklyn Hospital about February 1, 1914, gave a two plus reaction. Dr. Tilney made a complete neurological examination of him a few days later and diagnosed the condition as one of lateral sclerosis. This patient has had ten of the salvarsanized serum injections. Clinically, he has improved in every respect except in the matter of walking. Following his seventh treatment he visited the country for two weeks and returned very much improved in the matter of his gait. Later, it went back on him again and has improved but little since. Following his tenth treatment he went to Wilmington, Delaware, to live with a relative and has remained there.

Serological Record for Mr. W.:

Date	Serum	Spinal Fluid					
		.25	.5	.75	Cell count	Globulin	Fehling
Feb. 16, 1914	++	++	+++	+++	11	Large quart	Reduc'd
March 12, 1914	++	++	+++	+++	4	Diminished	"
March 26, 1914	+	+++	++++	++++	4	Mere trace	"
April 9, 1914	++	+++	++++	++++	5	Faint trace	"
April 23, 1914	+	++	+++	+++	2	Trace	"
May 10, 1914	+	+++	+	+	5	"	"
June 16, 1914	++	+++	++++	++++	4	"	"
July 8, 1914	+++	++++	++++	++++	2	Faintest trace	"
August 4, 1914	++++	++++	++++	++++	2	Faint trace	"

CASE III: Mrs. H., age 44, married. Father died of "apoplexy." An aunt of the father's was demented the greater part of her life. A sister of the father's became demented at the age of 45 years, and has remained so ever since. Mother died at age of 44 years of a "stroke of paralysis." Several of mother's sisters and brothers died of T. B. Family history negative for cancer.

At the age of 16 years suffered a severe injury to spine by a fall from a horse. This was followed by four years of failing health, characterized by a considerable loss of weight, extreme pallor, and prostration. Recovered at the age of twenty years, but had always since been easily fatigued. For the next nine years she taught school and claims to have been under a fairly constant high nervous strain.

At the age of 29 years she married. In the fifth month of married life she apparently conceived—there was a suppression of menses. There then developed a condition of profound mental depression. This lasted for eight weeks, when upon consultation of physicians, a catheter was inserted into cervix and a flow induced. Patient claims that no fetal products were discovered in the flow. Was regular again, until a similar condition occurred five years later, when the same course was pursued. Menstrual history had then remained regular until January 1, 1914. For ten weeks from that date there was no flow. It was then re-established spontaneously.

The history of her nervous afflictions dated back nine years. In 1905, while in Switzerland, following an acute "cold," patient suddenly developed a ptosis of the left eyelid and a loss of accommodation in the left eye. This condition lasted about six months, clearing up under K.I. therapy. A few months after the onset of previous condition there developed a partial paralysis of the vocal cords and the muscles of the throat. This was further followed by the sudden appearance of edema of the left forearm and hand. These latter conditions lasted eight months, yielding finally to K.I. administrations. During this time she was conscious of an increasing sense of fatigue.

In February, 1907, she had a fall, striking forcibly the base of the spine. Shortly after that she first noticed symptoms of difficulty in walking. There appeared the sensation of cushions under the soles of the feet, loss of the sense of exact localization, pains in upper and lower extremities. She noticed especially a sense of insecurity in walking down stairs. She had a dread of being up at any great height, and frequently dreamed of falling from great heights. Was still able to get about fairly well though.

In January, 1908, a dilatation and curettage and several minor operations were performed upon her, and from that time her ability to walk was permanently and seriously impaired. She grew steadily worse—lost greatly in flesh and strength and could walk only with the greatest difficulty and with much support. She then had eight osteopathic treatments without gaining. The next seven months were spent in a sanitarium, where "treatment" consisted of massage and "electrical applications." There, her general nutrition improved and she recovered to a slight degree the use of her legs.

At the time of her examination in April, 1914, she walked only with considerable assistance and then with great difficulty. She complained of constant nausea, eructation of gases and frequent vomiting attacks. Dr. Tilney diagnosed her case—tabes dorsalis. On April 23, 1914, Dr. Smith examined her serum and spinal fluid and gave the following results: Fluid, clear. Cell count, 48. Glob., trace. Fehling, reduced. Wassermann blood serum, +. Wasserman spinal fluid, +++.

This patient took in all five of the spinal treatments. The general condition improved markedly from the start. She gained in weight and strength. The gastro-intestinal disturbances vanished. When seen two weeks after her second treatment, she declared she was walking better than at any time during the previous six years. She complained bitterly though, of the reactions immediately following the treatments. The pains seemed indeed to be very violent. The mere thought of the lumbar puncture upset her. She developed a great dread of the treatments and sought to postpone each one as the time drew near. At her request and her husband's I had a serological report mailed to them each time an examination was made. This probably was not a wise procedure, for they possessed just that little knowledge which is often a dangerous thing. When they discovered that the Wassermann report of August 4th had a greater plus positive return than that of June 30th, they became discouraged and decided that she would forgo further treatments "for a while at least." She also decided that mercury did not agree with her and refused to continue with it. She believed that the K. I. was helping her and has continued that up to the present time.

I saw her at her home one month ago. She declared she was feeling better than she had for a great many years. She had gained close to 20 lbs. in weight during the past year, had been free from gastro-intestinal disturbances, and she felt strong. Improvement in walking had progressed up to a certain point and had stayed there. With just the lightest guidance she moved about quite well, though the gait was still ataxic. She thought that as long as she had done so well without additional treatment, she would continue without it; but would repeat it at the first sign of relapse.

Follows her Serological Record:

Mrs. H.	Serum	Spinal Fluid					
		.25	.5	.75	Cell count	Globulin	Fehling
April 23, 1914	+	+++	+++	+++	48	Trace	Reduc'd
May 19, 1914	++	+++	+++	++++	27	"	"
June 9, 1914	+++	+++	++++	++++	10	"	"
June 30, 1914	++	++	+++	+++	5	Neg.	"
August 4, 1914	+++	+++	++++	++++	4	Slight trace	"

Case IV: Mr. C., age 49 married, plumber.

For two and one-half years prior to this patient's first treatment (June 15, 1914) he was unable to pursue his trade—that of plumber—because of general muscular inco-ordination and advancing general weakness. During the last six months of that time he was confined to his bed for the greater part of the time. Today (May 26, 1915) he claims to be able to work better than at any time during the past five years. He climbs ladders for two and three stories while carrying heavy weights. He can get up from cramped postures on hands and knees, with comparative facility. He has gained in weight 16½ lbs. Father died at age of 84 years, gangrene of toe. Mother died at age of 82 years, pneumonia. Patient had influenza 25 years ago. Also gives a rheumatic history. Had Chancre 26 years ago, followed shortly by a diffuse rash. Symptoms cleared up in a few months. Married five years after the date of chancre. Eight children born—four living, four dying in their first year. Three miscarriages. Patient has not touched alcohol in 20 years.

Patient first noticed signs of his present trouble in February, 1913. Following a prolonged exposure to dampness, he had a severe chill and then shortly developed a sharp pain in the right side of head and neck and a constant loud ringing sensation in the right ear. This latter symptom, together with an impairment of hearing on that side, had persisted up to the time treatments were started. (Eighth nerve involvement.) On occasions "ringing" was noted in the left ear, but this was transient in character. His bladder gave him trouble. There was extreme urgency and frequency of urination—both by day and by night. But small quantities would be passed at a time. Control over bowel movements remained good. Pain across back in region of the kidneys appeared every morning. On emptying bladder the pain disappeared and he was free from that pain for the rest of the day. Symptoms of marked muscular inco-ordination first became impressed upon the patient in about June, 1913. For some time before that though, he remembers that he was becoming more awkward and clumsy in handling his tools and in getting about. His gait then became markedly staggering, especially at night-fall. Vertigo, particularly on arising from a chair or when going down stairs, frequently occurred. At times his knees seemed to lose all strength and he would feel a "caving in" sensation of the joints. Moderate frontal headache would come and go. From July, 1913, there would frequently appear sudden cramp-like pains down both legs from hips to the great toes—and in the forearms. These pains occurred invariably at night. His appetite remained good. He slept fairly well—though while sleeping he kicked about a great deal and had no control over his bladder. There was but little disturbance in sexual vigor. He even gained slightly in weight, but he grew progressively weaker and more and more awkward. From January, 1914, on he spent most of the time in bed.

Patient was referred to me by Dr. Hatton, and by me sent into the Methodist Episcopal Hospital. He presented a fairly well nourished appearance—rather florid complexion. The pupils were not quite equal, the left being slightly smaller. A true Argyle-Robertson pupil presented. He gave a pronounced Romberg. At the moment of examination his gait was moderately ataxic. His superficial reflexes were present, but somewhat diminished. Serological examination by Dr. Smith confirmed a diagnosis of tabes dorsalis.

He has taken ten spinal treatments of salvarsanized serum, with hg. salicylate by hypodermic and K. I. (plain, in drops) in the intervals. The reaction after his ninth treatment was particularly severe and so I reduced the strength of the serum to 60% in his last or tenth. His clinical improvement has been consistent and steady and parallels faithfully the improvement to be noted in his serological record. With the exception of the immediate reactions to treatment he has been entirely free from pain. The "ringing" in the right ear has not disappeared. Control over the bladder has improved, though it is not yet what it should be. There is still some *frequency* of urination, but there is not the former *urgency* (*i. e.*, the fear of involuntary evacuation if not *immediately* passed). There have been no further attacks of vertigo or headache. Muscular co-ordination has distinctly improved, the patient handling himself with restored confidence. He is now able to work steadily. Only at night time and after a hard day's work is there a suggestion of his former staggering walk. His knees feel strong. He has gained 16½ lbs. in weight, eats heartily, and sleeps well. On December 19, 1914, one day after an intramuscular injection of hg. sal. gr. jss there developed an intense burning and itching sensation, starting in the small of back and later appearing in the bends of the elbow joints. The sensation was continuous and lasted about three days. Inspection revealed what appeared like numerous minute superficial capillary hemorrhages into the skin. There have been no further evidence of this phenomena.

Mr. C.'s Serological Record:

Mr. C.	Serum	Spinal Fluid					
		.25	.5	.75	Cell count	Globulin	Fehling
June 16, 1914	+	++	+++	++++	47	Trace	Reduc'd
July 7, 1914	+	+++	+++	+++	18	Faint trace	“
July 22, 1914	±	+++	+++	++++	8	Trace	“
Sept. 10, 1914	±	+++	+++	++++	7	Trace	“
Oct. 14, 1914	—	+	++	++	11	Very faint trace	“
Nov. 10, 1914		+	++	+++	5	Trace	“
Dec. 7, 1914	—	—	++	+++±	3	Very faint trace	“
Feb. 9, 1915	—	++	+++ +++	+++ ++++	2	Mere trace	“
March 16, 1915	—	—			2	Trace	,‘
May 5, 1915	—	—	—	—	1	Neg.	“

CASE V: Mrs. G., age 32 years, married, housewife.

Patient has been married thirteen years. Two children were born before probable date of infection. Both now living and well. Patient has no knowledge of a primary lesion. She acknowledges pronounced secondary manifestations eight years ago—macular, copper colored rash over trunk and arms, sore throat, and some falling of the hair. She took a few months' treatment at the time. Symptoms apparently cleared up. An ulcer developed on the floor of the nose three years ago.

For six months prior to admission to hospital, patient had been "failing in health"—becoming tired on slight exertion and having frequent attacks of vertigo. A persistent temporal headache set in, later to become very intense. Four months later she began to vomit. This occurred without relation to the intake of food, without nausea, and while not projectile in character, without strain or effect. These vomiting attacks became more and more frequent, amounting to as many as ten or twelve a day. Attacks were unassociated with pain. Patient grew weaker and weaker and for the last few weeks was confined to bed. In a period of six weeks she had lost 38 lbs. in weight. She was treated for gastritis without improvement. There were no menstrual changes. She was sent to the medical service of the Methodist Episcopal Hospital on July 25, 1914. On admission she had to be carried in, being too weak to walk. After two days' observation she was discovered to have a positive Wassermann in blood and spinal fluid and she was turned over to us for appropriate treatment with the diagnosis of acute brain syphilis. The vomiting had continued uninterruptedly. She was given an intra-venous injection of salvarsan on July 27, 1914, and salvarsanized serum intra-spinally on the following day. Two days later the vomiting was lessened materially, and on the 6th day was stopped completely, *and has never recurred since.* The vertigo disappeared shortly after and has not returned, and the same is true of the headache. On admission she looked acutely ill and showed her loss of nutrition. She was too weak to move much. The superficial reflexes were absent; her pupils unequal and of sluggish reaction. She had a peculiar staring expression. She soon began to eat heartily and in two weeks after her first treatment was able to get up and about and was discharged.

She has now had six treatments and clinically is restored to *perfect health.* On September 9, 1914, she weighed 113 lbs. On April 16, 1915, she weighted 138 ¾ lbs.—a gain of 25¾ lbs. On May 26, 1915, she weighed 141½ lbs.—a gain of 28½ lbs. She eats anything and everything without gastric disturbance, does a day's housework without tiring, and has no attacks of dizziness nor headache.

The serological side of her case has decidedly not kept pace with the clinical. She took another treatment on May 17, 1915. Although feeling perfectly well she will continue to take treatments, under my advice, until we can secure better serological findings.

Mrs. G.	Serum	Spinal Fluid					
		.25	.5	.75	Cell count	Globulin	Fehling
July 28, 1914	++++	++++	++++	++++	4	Marked excess	Reduc'd
Sept. 4, 1914	+++	++++	++++	++++	...	Excess	"
October 27, 1914	+++	++	+++	++++	1	Trace	"
Dec. 15, 1914	++++	++	++++	++++	1	"	"
Jan. 29, 1915	++++	++++	++++	++++	2	Present	"
March 2, 1915	++++	++++	++++	++++	1	"	"

Case VI: Mr. A., age 34, English, weaver.

The history in this case was difficult to obtain. What little there is was gained through questioning his wife (who could give but little), the patient himself being in a state of pronounced alienation. One sister has been in a hospital for the past two years. Has "queer spells." Patient has been married three years. One child born—died in its first year. Wife has had no miscarriages. Up to January, 1914, patient was a good, steady worker, of easy going disposition. He had had no serious illness, with the exception of some slight stomach disorder three years before. In January, 1914, his wife first noticed a change in his disposition and manner. He began to get "nervous"—became irritable on slight provocation, was easily excited, complained of vague headaches and of becoming easily tired out. These symptoms became more and more pronounced. Memory would fail him. Evidences of "absentmindedness" were many. He repeated over and over many useless acts, and omitted doing important ones. In June, 1914, he fell, striking his head and from then on all symptoms were exaggerated. He then developed extreme difficulty in speaking. He lost greatly in flesh and strength. On October 5, 1914, he had a Wassermann done by the Health Department. The report was returned a four-plus reaction. He was then given a series of frational doses of salvarsan at weekly intervals. He was given gms. O. 2 at a time for seven injections. These treatments resulted in no change for the better. In fact, he grew progressively worse. He became so weak that he could scarcely walk. There was a marked general tremor. The patient was carried in on admission to the Methodist Episcopal Hospital on February 10, 1915. He had no orientation as to time or place. He was noticeably agitated. He carried with him numerous picture cards with which he constantly occupied himself, arranging and rearranging them in piles, etc. He had a mania also for printing, copying many passages from a large book that he brought with him. His manner was one of elation. He always felt "fine." While constantly chattering, he spoke with difficulty—pausing distinctly between each word—in form typically *scanning.* Thought was very incoherent and ideas very flightly.

Between February 16th and May 5th, 1915, he received six intraspinal treatments with salvarsanized serum. He gained in strength, became subdued in manner, and lost his tremor by the time he had had two treatments. He was discharged from the hospital and returned at two weekly intervals for his subsequent treatments. He became able to recognize time and place and to show little or no agitation. Later he became a bit depressed. He showed no other improvement. On the night of May 7, 1915, he suddenly became somewhat violent and was taken out to the Kings County Hospital and entered in the service of Dr. Brush. I judged that this was a case of paresis of a rapid or pulminating type, (agitated form?).

Mr. A.	**Serum**	**Spinal Fluid**					
		.25	**.5**	**.75**	**Cell count**	**Globulin**	**Fehling**
Feby. 16, 1915	++++	++++	++++	++++	26	Present	Reduc'd
March 2, 1915	++++	++++	++++	++++	5	"	"
March 16, 1915	++++	++++	++++	++++	3	"	"
March 30, 1915	++++	++++	++++	++++	3	"	"
April 13, 1915	++++	++++	++++	++++	3	"	"
May 5, 1915	++++	++++	++++	++++	3	"	"

CASE VII: Mr. B., age 42, steamfitter. Patient had typhoid fever in 1892, and yellow fever in 1895. No other illness recalled. Positively denies knowledge of specific infection or of any of its manifestations. Eight years ago a callus formed on the plantar surface of the right foot at the site of the first metatarsal-phalangeal juncture. An ulcer formed beneath this callus and gave rise to considerable discomfort. This was excised at the time and apparently healed completely, only to recur some three months later. From then on the sore would heal up and recur again and again. For six months prior to January 9, 1915, it had remained healed. On that date a heavy weight fell on the dorsum of his foot. The toes and the foot itself were badly bruised. About one week later the ulcer broke out and began discharging and giving a great deal of pain. He was entered into the surgical service of Dr. Spence at the Methodist Episcopal Hospital. After several days of observation a Wassermann was done on him with a positive ++++ return. He was then turned over to us for appropriate treatment.

The patient was conscious of positively no symptoms, other than the perforating ulcer of the foot. He felt he was enjoying good health. The patient is of the lean, lanky, apparently hardy type. He shows a moderate romberg, but no ataxia. Patella reflexes are absent. The left pupil is larger than the right. Both react sluggishly to light and accommodation.

After the first treatment, the ulcer healed up promptly and the pain disappeared. Improvement continued after the second treatment. He had gained six pounds in weight. Following the third treatment the ulcer broke down again, discharged more profusely than ever, and gave him more pain than before. Naturally, he has become discouraged. I have advised him to take another treatment, and am now waiting to hear from him.

Mr. B.	**Serum**	**Spinal Fluid**					
		.25	**.5**	**.75**	**Cell count**	**Globulin**	**Fehling**
March 16, 1915	++++	++++	++++	++++	36	Present	"
April 13, 1915	++++	++++	++++	++++	8	"	"
May 4, 1915	++++	++++	++++	++++	3	"	"

CASE VIII: Mr. G., age 35, glass-blower, married. Father living and well. Mother died of a stroke of apoplexy. Patient admits having a chancre at the age of 17 years. Observed no secondary or further manifestations of the disease. Married at the age of 22 years. Four children have been born, all living and apparently well. Wife had one miscarriage. Patient has always been well and recalls no other attack similar to present one. Has used alcohol in moderation.

For the past year patient had been "failing in health"—growing weaker and weaker, and for that reason had been unable to continue at work. On or about February 10, 1915, patient first showed definite, pronounced signs of difficulty in speaking. It became hard for him to articulate. Gradually he gave up trying to talk much, speaking only when spoken to, and then answering in monosyllables. Even this required apparent effort. A little later on a like difficulty in masticating and swallowing developed. He grew still weaker and was confined to bed. In three weeks he lost 30 lbs. in weight. In the last two weeks before admission to the hospital he was able to take fluids only. On admission to the Methodist Episcopal Hospital, March 11, 1915, he was carried in. He looked acutely ill, showed marked emaciation and asthenia. All superficial reflexes were absent. The right pupil was larger than the left and both reacted sluggishly to light and distance accommodation. He presented a picture of bulbar paralysis. There was a complete relaxation of the muscles around the mouth. It was almost impossible to get him to speak. Deglutition was evidently difficult. On March 12, 1915, spinal fluid and blood were examined, with the following result: Cell count, 14. Fehling, reduced. Globulin, present in excess. Wassermann blood serum and spinal fluid, ++++

Patient was unable to whistle. Paralysis of the muscles around the mouth, of the muscles of deglutition, and of the tongue was obviously present. No other paralysis were present.

Following his first spinal treatment of March 16, 1915, he seemed to get worse. He appeared to go into a "low typhoidal" state. Sordes collected on his teeth, a pecular musty odor came from his body, he acted as though he was unconscious part of the time; he ran a temperature of 100° F. to 101.6° F. for several days; he had to be catheterized. Following his second treatment on April 6th, these symptoms all improved and gradually passed away. He began to speak more freely. He developed a few delusions and hallucinations, but these proved to be but transitory in character. Following the third treatment on April 27th, there was most decided improvement all around. He now spoke very freely, picked up greatly in flesh and strength, was able to eat solid food, and had a true insight into his former delusions. He was able to get up and about and was discharged from the hospital after his fourth treatment on May 11th. He will return at two weekly intervals for future treatments.

Mr. G.	Serum	Spinal Fluid					
		.25	.5	.75	Cell count	Globulin	Fehling
March 12, 1915	++++	++++	++++	++++	14	In excess	Reduc'd
April 6, 1915	+	++++	++++	++++	....	......	"
April 27, 1915	±	+	+++	+++	3	Present	"
May 11, 1915	++++	++++	++++	++++	....	"	"
May 25, 1915	++++	++++	++++	++++	3	"	"
June 8, 1915	++	+++	++++	++++	2	"	"
June 29, 1915	++	+++	++++	++++	2	"	"
Aug. 3, 1915	—	—	+	+++	2		"

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GONORRHEA IN WOMEN.

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IN 1872, Emil Noggerath published a work on gonorrhea which was destined to revolutionize the view of the medical world regarding the clinical significance of the disease, more especially of gonorrhea in the female. He was the first man to insist that inflammation of the uterus and its appendages was the direct result of gonorrhea and that gonorrhea was extremely intractable to treatment, that it often remained latent for months or years before causing severe complications, and that infection as a result of sexual intercourse might result after long periods of quiescence.

He made this statement: "A woman who at any time in her life has had an acute gonorrhea has to expect at some more or less distant period—it may be a month or a year—a subsequent attack of peritonitis in some form," and that "the wife of a man who has ever suffered from gonorrhea is with regard to an attack of perimetritis, or cellulitis, in the same position as if she herself had had an acute gonorrhea." He dwells strongly on this point and goes on to say: "The young, hitherto healthy wife, begins to complain a few weeks after marriage. Menstruation commences to be more profuse than formerly, accompanied by a dysmenorrhea. Leucorrhea becomes more or less excessive, especially after the periods. This gradually increases, ultimately becoming continuous, without intermission, until the next menstruation begins. After a few months severe pain commences in either or both sides of the pelvis and the sufferer is ultimately compelled, on account of fever and unbearable burning pains in the abdomen, with increased leucorrhea, to take to her bed and send for medical assistance."

These may have been the viewpoints of a pessimist and while the author is not personally *extremely* pessimistic regarding the treatment of gonorrhea in women, he is extremely careful in making the statement that an individual patient is absolutely cured of her infection. He has come to this conclusion, not only from his work in institutions, but from his work in private. In institutions he thinks the difficulty is summed up in lack of control, and whereas we are supposed to have our private patients under greater control than our institutional patients, so far as chronic diseases are concerned, the patient who visits our office will, before a cure is completed in a gonorrhea, generally lose patience, or the symptoms will be so absolutely nil that she, of her own accord, feels that she is cured, and deliberately ceases to make the necessary visits to our office.

I do not wish to discourage other men, but the subject is of importance enough so that I feel that the necessarily protracted treatment in these cases should be impressed upon every medical man.

The presence of the gonococci is proved only when the bacteria are found in characteristic grouping, in leukocytes, when there is a chance for counterstaining with Gram's method, and when the organisms under suspicion correspond morphologically to the gonococcus. The following organisms are Gram negative: The gonococcus, the micrococcus melitensis, the micrococcus catarrhalis, the typhoid bacillus, the bacillus coli and similar bacteria, the cholera and similar vibrios, the bacillus of fowl cholera, rabbit septicemia and malignant edema (the last is said occasionally to remain Gram positive), Friedländer's plague bacillus, the glanders bacillus, the bacillus of influenza, the spirillum of relapsing fever, and the meningococcus. All bacteria which are Gram positive in examining for suspected gonorrhea are, of course, easily excluded by the proper application of the Gram stain.

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* Read before the Brooklyn Medical Society at a stated meeting; also read subsequently by request before the Williamsburg Medical Society at a stated meeting.

Of the list given above the micrococcus meningitidis and the micrococcus catarrhalis are morphologically very similar to the gonococcus, and as they are both decolorized by Gram's stain, they cannot be excluded by this method. The micrococcus catarrhalis is slightly larger than the gonococcus, but, owing to the variability in the size of the latter, little significance can be attached to this feature. The others in the list can be excluded morphologically, but, fortunately, none of the organisms making up this rather formidable list of Gram negative bacteria is often found in the genital tract. Nevertheless, when a positive diagnosis is required, either for sociological or medical-legal purposes, other means than staining have to be resorted to. For these cases cultures offer a method of absolute certainty in diagnosis, but the use of the culture methods, unless performed by a skilled bacteriologist, is useless.

The genito-urinary men of the present day who have confined their practice almost entirely to the treatment of gonorrhea in the male, are very much in advance in their methods to those under whom the women come for the treatment of their gonorrheas with the complications. Unfortunately, the treatment of gonorrhea in the female is confined almost entirely to the general practitioner, and this condition of affairs has not led to much advance in our treatment of these cases.

A point of the utmost importance in securing material for cultures is that, when possible, the material be obtained by curettage of the diseased area.

Regarding the complement fixation test, Schmidt states that after having tested it in 103 cases, the results indicate that a negative test in a patient is good evidence that the disease is cured. Another authority states that a gonorrheal fixation test once positive and later negative is of great value in estimating a cure. In persons recently infected the test is apt to be negative. Schwartz states that a positive reaction should not be expected earlier than about the beginning of the fourth week from the onset of the infection. It would seem that the test should be especially valuable in the case of women in whom during the chronic stage the gonococci are very difficult to demonstrate, but further research will be required before the exact value and scope of the complement fixation test can be absolutely determined.

The anatomical structures in the female most frequently invaded which can be reached by a treatment other than operative, are, the urethra, Bartholin's glands, the glands about the vestibule, the cervix, and, less often than the others, the vagina, unless the patient be a child.

In an extension of the disease above the cervix it extends by direct continuity along the endometrium and along the mucosa of the tube. The most frequent pathological condition produced by a gonorrheal infection of the tube is a pyosalpinx. Gonorrheal lesions of the fallopian tubes possess certain characteristics that, while not sufficiently absolute to prove the etiology of the infection, are pronounced enough in the great majority of the cases so that we may be moderately certain of the type of infection present. The fact of the extension of the gonococcus along the surface mucosa produces certain macroscopical pictures that are more or less characteristic. Whereas pyogenic microorganisms reach the tubes by way of either the blood- or lymph-vessels of the broad ligament, the mucosa is not primarily invaded. In these infections ovarian abscesses and cellulitis are common, while from the very nature of the gonococcal invasion, these structures are less frequently involved. When the end of the fimbriated extremity of the fallopian tube has not been closed through the inflammatory result of the primary gonococcal infection, the ovary may become infected secondarily, a peri-oophoritis resulting. In the pelvis inflammatory disease (peri-oophoritis) is the most frequent pathological condition of the ovaries found. When the substance of the ovary itself is infected, the most frequent route of infection is through a recently-ruptured follicle. Such ovaries are rarely larger than a hen's egg, and are often but little increased in size. During the chronic stage sclerotic changes are common and the ovary may be even smaller than normal. As a rule, multiple retention cysts are present. A frequent result of a gonococcal infection of a tube is a hydro-salpinx.

Gonorrhea is usually contracted through sexual intercourse. One reason why this is true is the fact that if exposed to room temperature, or allowed to dry, the gonococcus loses its virulence, or perishes in a few hours.

Instances are not lacking to show that at times patients have been contaminated through dirty instrumentation.

Accurate statistics relative to the period required for the incubation of gonorrhea in women are obtained with difficulty as the initial symptoms of this disease in the female are often so slight and of so insidious or transitory character, that the actual date of onset is difficult to determine definitely, and, as a further hinderance, the onset is, as a rule, so mild that the physician is rarely consulted until the disease has made considerable progress. In fact, when the infection is confined to areas below the internal os it is not uncommon for patients to be in ignorance of the existence of the disease. Morton believes that gonorrhea in tuberculous or debilitated patients is prone to be subacute from the onset and to run a protracted course.

The symptomatology, when you see your patients early, is that of an acute inflammation, differing according to the anatomical structure invaded, and as we often have only Bartholin's glands, the vagina and the cervix invaded, many women have no symptoms of a urethritis.

The honeymoon gonorrhea, where the gentleman, out of courtesy to his young wife, does not wish to cause her pain and does not rupture the hymen at the first intercourse, is usually the most extensive infection that we find in women, as the infectious semen is deposited at the orifice of the urethra and at the openings of Bartholin's glands. As a result, we have an acute vestibular gonorrheal urethritis and Bartholinitis. This condition causes, of course, considerable pain and intercourse ceases. If a woman were seen in this condition by a competent physician, she could easily be treated and the spread of the disease prevented, but most of these patients do not consult a physician on account of a sensitive modesty. As a rule, they employ douches and in this way carry the infectious material from the outside into the vagina, and thus transfer the disease to the cervix.

It is a well-known fact that a female gonorrheic can transmit infection at one time and not at another. They are more liable to produce an infection directly after a menstrual period. A curious feature is shown by the fact that a husband may infect his wife and practise abstinence during the course of the treatment of his disease and may, upon resuming marital relations, be inoculated by her and develop an attack, perhaps more severe than his original one; or husband and wife may both suddenly manifest severe symptoms. The lack of knowledge of this peculiarity of the microorganism has frequently led to accusations of infidelity.

In examining a case of suspected gonorrhea in the female anamnesis is of particular importance. Especial attention should be directed to the menstrual history, inquiries being made concerning changes in the character of the flow and the development of a dysmenorrhea. Inquiries should be instituted concerning the existence of vesical irritability, frequency of urination, dysuria and cloudiness of urine. The possibility of previous attacks of pelvic peritonitis, as well as of dyspareunia and painful defecation, should be inquired into.

If the patient is a married woman, the questions should be so framed as to be entirely free from all suggestions of a marital contamination. You should not pass upon the discharges of any patient from the urethra unless she has been instructed not to urinate for several hours previous to the examination.

As to the methods of obtaining a smear: Von Giesen has compared the results obtained by the use of a cotton swab with those secured by using a medicine dropper, and found that with the latter a considerably larger proportion of positive results were obtained. In case where it is extremely difficult to find the organism, Schultze's method of thoroughly cleansing the vagina and placing a sterile tampon against the cervix will frequently give us a smear within a few hours which will be positive. The author in his office work uses the platinum loop almost entirely in place of the cotton swab, or, where there is difficulty in obtaining a smear, a small, sharp curette, especially in obtaining smears from the cervix. Smears should be taken from the urethra and marked "U"; from both the right and left Bartholin's glands, marking them "B. R." and "B. L."; from the vagina marking it "V"; and from the cervix marking it "C." In chronic cases the gonococci are most frequently found in Skene's ducts. After having obtained your specimen the usual pelvic examination can be made, especial attention being directed towards detecting adhesions of the uterus or its appendages and enlargements or lesions of the latter. If the patient is a virgin, the intravaginal manipulations necessary for obtaining a smear can usually be performed through a large sized endoscope without resulting injury to the hymen.

After the clinical symptoms of gonorrhea have subsided, all patients should be subjected to a thorough bacteriological examination; Norris says at least three. In the author's service at the County Hospital we insist upon five negative smears in the adult and seven negative smears in children, before we will sign them out as cured.

If the patient is unmarried, she should be instructed to return for further examination when contemplating matrimony, or on the first appearance of any symptoms suggestive of a recurrence of the original condition. In married patients the greatest care should be exercised to obtain complete cure before the marital relations are resumed.

In dealing with female gonorrheics the position is often an extremely difficult one, especially if the patient is a married woman. Under no circumstances should the patient be left in ignorance as to the infectious nature of her disease. On the other hand, care must be taken not to arouse suspicion of marital infidelity in a case that might possibly be the result of an extra-genital infection. No rule can be laid down to govern all cases. Common sense and tact are the essentials. An endeavor should be made to have the husband consult a genito-urinary surgeon, as it is absolutely futile to attempt to cure a gonorrhea in a woman whose husband is afflicted with a neglected or chronic gleet or other form of Neisserian infection and who is constantly re-infecting his wife.

Regarding treatment, it depends entirely upon the stage of the disease. In the acute stage practically all that is demanded is absolute rest, a light diet, particularly about the time of the menstrual period, and great care should be taken in your methods of obtaining cleanliness not to transfer the infection farther along the genital tract than the original infection. Chronic cases require much patience on the part of the physician and the patient as well. Different men have favorite remedies which are used. The silver salts are the favorites of most authorities. In the treatment of the urethra the endoscope is invaluable. The author finds that Skene's glands are best treated by means of the actual cautery. The glands of the vestibule also yield more readily to this form of treatment. Infections of Bartholin's glands may yield to injections of the silver salts, or it may necessary to dissect them out in their entirety. He also uses the cautery in the treatment of gonorrheal conditions of the cervix, making linear cauterizations of the cervical canal once in about ten days or two weeks. When the uterine endometrium has become infected and an extension to the appendages can be ruled out, he believes with Boldt that the only treatment that offers any cure is a thorough curettage and treatment of the curetted uterus by means of iodin or some silver salt. Treatment of the tubes and ovaries should be conservative over a sufficient length of time until you arrive at a conclusion that operative measures are imperative, and here he wishes to state that too early operation is the greatest cause of attacks of pelvic peritonitis following operation upon these conditions.

Regarding conservative or complete surgery in these cases, one must be guided by the individual conditions which one meets, explaining to the patient that conservative surgery may mean future pregnancies, or perhaps future operative procedures. As to whether one should, when doing radical surgery, do a supravaginal or a pan-hysterectomy will depend upon the condition of the cervix at the time of operation. If the cervix shows the result of the gonerrheal infection by an extreme endocervicitis with erosions, or if the patient is a married woman and has had children with the resulting lacerations, a pan-hysterectomy should be done.

To explain to you my rather pessimistic view of the treatment of these cases I could recite you many in my private work, but I will only give you the results of 21 cases treated in one of the public clinics as follows:

No.	Duration of illness	Diagnosis	Complications	Laboratory	Left the hospital
1	4 years	Vulvovaginitis	Pregnancy	No smear; no complement fixation	Against advice
2	?	Vulvitis-urethritis	Chronic adnexa involvement	No smear; no complement fixation	" "
3	8 months	" "	None	Smear negative; complement fixation negative	Recovered
4	1 month	" "	Acute adnexa with temperature	No smear; complement fixation positive	Against advice
5	2 weeks	" "	Chronic adnexa	Smear positive; complement fixation negative	" "
6	2 months	Bartholinitis urethritis	None	Smear positive; complement fixation negative	" "
7	2 weeks	Vulvitis	Endocervicitis	Smear questionable; complement fixation negative	" "
8	1 week	Vulvovaginitis	Vulvovaginal abscess	Smear positive; complement fixation negative	" "
9	3 weeks	Urethritis	Endocervicitis	Smear positive; complement fixation negative	" "
10	?	Vulvitis	Chronic salpingitis and endocervicitis	Smear positive; complement fixation negative	" "
11	?	Vulvovaginitis	Pregnancy	Smear positive; complement fixation questionable	" "
12	4 weeks	"	None	Smear positive; complement fixation negative	Recovered
13	?	"	Chronic adnexa	Smear positive; complement fixation negative	Against advice
14	?	"	Acute salpingitis	Smear positive; complement fixation positive	" "
15	?	"	Salpingitis; operated	No smear; no complement fixation	Rec'v'd from operation
16	?	"	" "	No smear; no complement fixation	" "
17	?	"	" "	Smear positive; complement fixation negative	" "
18	?	Vulvovaginitis; urethritis	Salpingitis	Smear positive; complement fixation negative	In hospital
19	4 weeks	" "	Adnexa involved	Smear positive; complement fixation positive	" "
20	10 "	Vulvovaginitis	Acute adnexa	Smear positive; complement fixation positive	" "
21	12 "	"	Arthritis	Smear positive; complement fixation positive	" "

CONCLUSIONS:

1. *Duration of Illness—*
   Doubtful in practically all cases. No acute cases noted.
2. *Complications—*
   3 cases with acute involvement.
   2 cases complicated with pregnancy.
   9 cases with chronic adnexa involvement, 3 of which were operated (2 total hysterectomy and salpingo-oophorectomy; 1 supravaginal hysterectomy).
   2 cases with endocervicitis.
   3 cases with acute adnexa involvement.
   1 case with arthritis (ankle-joint).
   1 case with vulvovaginal abscess.
3. *Smears—*
   In 5 cases no smears were taken, 3 of these cases leaving the hospital before smears could be taken.

- 14 cases had postive smears; 1 smear doubtful; 1 smear negative—question of diagnosis.

4. *Complement Fixation Test*—
    - 3 cases, no complement test done.
    - 6 positive complement tests:
        - 1 endocervicitis case.
        - 1 endocervicitis case.
        - 4 cases with adnexal involvement, 3 of which had acute adnexal conditions.
    - 1 doubtful test.
    - 11 negative tests,
        - 6 of which with chronic adnexa.
        - 3 negative in cases without complications.
        - 1 negative in vulvovaginal abscess.
        - 1 negative in endocervicitis.
5. *Operations*—
    - 3 cases operated and discharged as recovered without taking into consideration the involvement of the vagina, urethra and Bartholin's glands.
6. *Results of Treatment and Institutional Care*—
    - Total 21 cases:
        - 4 cases in hospital at the present time.
        - 3 cases operated, discharged as above stated.
        - 12 cases left hospital against advice without being cured.
        - 1 case discharged recovered without having a positive smear or complement test; diagnosis in this case doubtful.
        - 1 case discharged as recovered; this case was kept in the hospital by the Children's Society.

A review of these cases shows only one cure out of the total number, and that was a case where we had absolute control of the patient by means of the Children's Society. Many of the remainder left the hospital against advice. We must endeavor to have in our public clinics in the future greater control over this disease, which is so extremely infectious, that we may thereby be better enabled to limit the sources of infection.

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SURGERY OF THE DUODENUM.*

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IN the developing embryo we have three main divisions of the digestive tract—the foregut, midgut and hindgut. Clinically and anatomically we look upon the pylorus as the dividing line between the stomach and intestines, yet embryologically, we ought to place the dividing line at the junction of the foregut with the midgut, which is where the common bile duct enters the duodenum. In other words, we must consider the first portion of the duodenum as a part of the stomach, rather than as a similar structure of the jejunum. That the duodenum had definite peculiarities of which we know little, is certain. How are we to explain those cases of duodenal dilitation without apparent obstruction? Why should there be such a comparatively high toxicity to obstruction of the duodenum, as compared to any other part of the intestinal tube? Why does ulcer occur so frequently in the first portion of the duodenum, even though so subject to injury, and so constantly exposed to the high acidity of the stomach contents? Again, why should ulcer on one side of the pylorus be so prone to malignant change, and those on the other so resistant to that change? Primary carcinoma of the duodenum is so rare that it is almost a curiosity. And finally, have we an ideal treatment for these lesions?

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Originally in the developing embryo the intestinal tube is comparatively straight. The caecum develops, and later rotates across the small intestine, until the normal position of the caecum is reached. Failure of this rotation to take place, explains the abnormal location of the appendix in different instances. This normal rotation, however, makes the relation of the duodenum to the greater peritoneal cavity such a difficult matter for the average medical student to understand. Further, the duodenal jejunal junction is now a fixed point, and partial obstruction here, may explain some of the cases of duodenal dilitation. Others, are again explained by failure of the foregut and the midgut to accurately unite, thus partially obstructing the lumen. Some of these cases where no obstruction is present, seem to be associated with enteroptosis, these in turn, with intestinal stasis. Possibly the so-called "Lane Kink" and the "Jackson Veils" may be predisposing factors.

You are all familiar with the work of Whipple, Stone, and Bernheim, of Baltimore, on the toxicity of the duodenal mucosa. If a loop of the duodenum be closed (with a short circuit, operation beyond) the animals all die. Injection of the contents of the loop will kill another animal of the same weight. If these loops are drained outside, the animals still die, but if frequent washing of these loops be instituted, the animals will live. It is claimed that this material has the same effect on the other animal, if the bacteria are removed. I am informed by some of my medical friends, that it is quite possible to set up a duodenitis which produces most serious symptoms. All of which seems to indicate that under certain forms of obstruction there is some peculiar toxic property to the duodenal mucosa. Murphy, of St. Louis, has also recently reached the conclusion that the toxicity of intestinal obstruction is sometimes due to changes in the mucosa. His further, and very important suggestion lies in the fact that these changes may take place in the mucosa—say in a strangulated hernia—without visible change in the outer coats. Certainly a few cases have died where resection was not made, and autopsy has revealed nothing. This suggests the necessity of possibly removing the mucosa by resection, in delayed cases where the intestinal wall seems to be viable.

In considering the etiology of duodenal lesions, we must view them in their relations to associated conditions. For instance, it would not be fair in considering a breaking down lymph node in the neck, to forget the relation existing between it, and not only the other structures of the neck, but also those inside the mouth. This condition is not unlike infection in the abdomen. We know that the liver is a large organ into which the infected drainage of the entire abdomen is passed, in fact acting as a filter, in a not dissimilar way to the lymph nodes. Doubtless under normal conditions the bile is sterile, but with a primary infected focus in the abdomen, there must come a time when certain infection is carried out in the bile. What rôle does this play in the production of—first, gall-stones, and second, ulceration of the duodenum? We have heard much of the typhoid organism as a creative factor in cholecystitis, and gall-stones. This is an error, as nearly recent statistics base it below 10%. The very recent work of Roseneau, shows not only the prevalence of colon bacilli, but also streptococci in cholelithiasis and cholecystitis. Roseneau's work at first thought, would point to the mouth infection as being the only exciting cause of gastric and duodenal ulcer, but on further study it would seem—first, that these are secondary lesions—second, that they are metastatic in character, and third, that the primary lesion may be located almost anywhere. That the tonsils and teeth play the most important rôle, I do not doubt, but that it is the sole cause is open to question. Recently Dr. E. Gould had a patient, a young girl, taken acutely ill, with patches on her tonsils. The following day she developed pain in the abdomen. Twenty hours later I operated, and found a typical appendix. Cultures taken from the throat showed staphylococci, and scraping from the mucous membrane of the appendix, after washing, showed the same organism. A recent review of this literature, with a report of a similar case, is given by Anderson, in the October issue of the American Journal of the Medical Sciences.

One who has seen much of this work, cannot fail to be impressed by the frequency with which several of these abdominal lesions are co-related. Almost universally one finds a duodenal ulcer, associated with a far from normal appendix. How often in gall-stones, one has been surprised at finding the evidence of old trouble in the appendix. Again, at times, and this seems particularly true of ulcer, one is almost forced to accept Lane's view of ulcer being due to intestinal stasis, because of the frequency with which one finds the two associated. I cannot but feel that the lesions in the upper abdomen are secondary processes, infective in origin, secondary to a primary lesion almost anywhere, but most frequently in the tonsil and infected tooth pockets. Having these theories in mind, the treatment must include attention to the primary lesion in every case. I think the appendix also should be removed in every case of ulcer or cholelithiasis. The treatment of stasis is too uncertain a question for me to venture an opinion, but when present, adequate medical measures at least should be instituted.

Of course one of the vital questions in the treatment of these lesions is—do they undergo malignant change, and if so in what proportion? If malignant changes occur in any considerable proportion of these pyloric ulcers, the treatment must sooner or later be that of excision. On the other hand, if the proportion be small, in what cases are we justified in following Rodman's suggestion of excision? At present, one side of the problem is championed by the doctors Mayo, who say that 80 per cent of their cases of cancer of the stomach, show evidence of the malignancy being ingrafted on a chronic ulcer. The other side dispute their claim, even to the extent of denying that the changes spoken of are carcinomatous at all. I am totally unfitted to pass any judgment in this matter, only to add—I have the greatest confidence in the pathological work of the Mayo clinic. Further—the one fundamental fact that seems to be established regarding carcinoma, is that it follows chronic sources of irritation wherever they may be. Until these questions are definitely settled, the matter of excision must be seriously considered in these lesions.

The actual conditions in the duodenum demanding surgery, are congenital obstruction, ulceration with later obstruction and perforation. The treatment is usually a question between some form of excision, and gastro-enterostomy. So much has been written on the subject of gastro-enterostomy for ulcer, that it would seem useless to discuss the matter further. However, we have all found it to be far from an ideal performance in every case. Do not understand me as condemning it entirely, but there are a few objections which must be considered. The early work on gastro-enterostomy gave many instances of biliary regurgitation, but the later short loop, or no loop, has reduced this materially. This is still a serious problem, however. I would refer you to the recent literature where Bloodgood, Erdmann and others, have spoken of its more than occasional occurrence. Erdmann, in a discussion of this subject in the New York Academy of Medicine, said that nearly all of his recent cases of gastro-enterostomy, had required the stomach tube to relieve the dilitation associated with biliary regurgitation. It has happened to me several times within the last two years, once associated with acute dilitation of the stomach, which ended fatally, again, where after repeated washings the patient recovered, and a third, where I made the error of re-opening the abdomen, and found nothing abnormal. It is almost certain where the associated pyloric spasm has been relieved, or the attempted pyloric closure has given way, that the food passes through the pylorus, and not through the anastomosis. I am of the opinion that the excellent results following gastro-enterostomy, occur in those cases where healing of the ulcer caused sufficient contraction to close the pylorus. In any event, *there are many cases where gastro-enterostomy has been performed even in the presence of definite duodenal ulcer, which have failed to be permanently relieved.* Further, surely nature never intended to dispose of the duodenum by any such short circuiting procedure. I am fully in accord with the statement of Doctor Finney, when he says "Gastro-enterostomy ought to be an operation of necessity, never of election."

You will say—if good results follow the closure of the pylorus due to contraction of the ulcer, why not accomplish this in another way. Together with my associates, Drs. Butsch and Evans, I have worked for almost two years, trying out on animals, each of these known procedures for closure of the pylorus. First, a systematic effort was made to occlude the pylorus in normal animals without gastro-enterostomy. This work was reported in the Journal of the American Medical Association, issue of October 3d, 1914. It was done for the purpose of establishing the necessity for or against gastro-enterostomy in cases of acute duodenal perforation. As a result, I can definitely state that it is *impossible to produce obstruction by excising any amount of duodenal wall in normal duodenum.* Even though but a ribbon is left which will admit only the finest probe, it will dilate sufficiently for the ultimate recovery of the animal. Finally I have produced this condition in the human, in about twenty perforations where the ulcer was excised, and no obstruction resulted. I believe it to be impossible to produce obstruction where all of the scar tissue has been excised. If, however, the ulcerating area be not thoroughly excised, obstruction does occur in a considerable proportion of cases. This would seem to prove the advisability of performing gastro-enterostomy in the presence of acute perforations of the anterior wall of the duodenum, where excision is possible.

The second group of experiments was performed in order to produce pyloric occlusion in the presence of gastro-enterostomy. These may be summarized about as follows: Circular ligatures of catgut and silk, whether tied loosely or tightly, almost invariably pass into the lumen, without producing any permanent obstruction. Purse string sutures of all sorts produce the same result. Wrapping the pylorus with wire—as suggested by Ochsner—strips of aluminum suggested by Brewer, failed in a certain percentage of cases. Fascial strips laid around are more successful, but are not universally so. The round ligament of the liver is usually permanent, because it is a living graft, but again, this is not absolutely trustworthy. The many modifications, including excision of the mucous membrane, either duodenal or stomach, are equally uncertain. The complete division with suture of both ends, whether done first by Von Eiselberg or Doyen, is almost universally successful. Doctor Gerster however, has a patient in which this operation was done, and X-ray shows bismuth going through the pylorus. A rather complete review of this subject is given by Doctor Bartlett, of St. Louis, in the Journal of Medical Sciences, issue of May, 1915.

Lantern slides were shown—2 X-rays of dogs' stomachs after each of the above procedures.

In our series of experiments, we found that while it was impossible to secure complete occlusion by any method excepting that of Von Eiselberg, yet in practically all of the methods, in the presence of a gastro-enterostomy, sufficient occlusion took place by adhesions around the duodenum, to send most of the bismuth through the anastomosis. In our work we found that a great many of the dogs did poorly following any method of gastro-enterostomy. For a time all goes well, but finally loss of weight to the point of extreme emaciation takes place, and often times death. It has seemed to us, that the greater the occlusion of the pylorus in dogs, the more rapid the emaciation. Further, a remarkable dilitation of the stomach occurs in many of these animals, and in many of them the X-ray shows bismuth going through the anastomosis—yet—on autopsy, an anastomosis large enough to admit two fingers was present. Of course we know in the human this is not so, because there has been a sufficient number of operations after complete closure, to disprove both features. I merely mention these circumstances in dogs, because I have been unable to explain them.

In reviewing this work, I cannot refrain from adding a remark by that exceedingly clear and gifted surgeon, Doctor W. J. Mayo: "That in the presence of real ulcer, any operation of pyloric occlusion is probably unnecessary." This is doubtless the key note to the whole situation, because the contraction of the ulcer in healing, produces the ideal form of pyloric occlusion. However, if one desires to produce a permanent block for any reason, the Von Eiselberg method is the ideal performance. In view of its greater danger, and the high percentage of closures, clinically, by the other methods, it is unwise in my judgment, to attempt it in any but exceptional instances. The ordinary infolding suture has no mortality, and while not successful in all instances, offers a sufficiently reliable method for most cases.

Surgery in this region is sometimes particularly difficult, because it is almost impossible to distinguish between a benign perforation with inflammatory axudate around the perforation, and malignancy. In a recent discussion on this subject, Doctor Rodman made a perfectly plain statement, that this diagnosis is often impossible, either by clinical methods before operation, or by palpation during laparotomy. I would go further, and say at times the diagnosis is almost impossible by the microscope. In the presence of this dilemma, how is one to decide in favor of an anastomosis or excision? If one accepts the assurance of many, that these become malignant in the future, one must lean towards Rodman's excision. In this connection I have had a few experiences which are of interest, bearing on both sides of the question. In one instance I considered the condition malignant, and inoperable, merely doing an anterior anastomosis. Five years later I operated for an acute perforation of an ulcer in the jejunum, at the site of the anastomosis and found that the original tumor had entirely disappeared. The patient is still alive and well. In this instance I should have performed a posterior anastomosis, had I not made the error of believing this to be an inoperable carcinoma. On the other hand, Mr. W. was treated for four years for ulcer. X-ray pictures taken one year before operation showed contraction, almost obstruction, quantities of bismuth remaining in the stomach after twenty-four hours. One year later I found a large mass, which on section showed positive carcinoma. This patient has since died of recurrence. This case to my mind is positive evidence that a malignancy can occur on an old ulcer base. In view of these facts, it would seem that the ideal procedure were that of excision in any doubtful case. However, in view of our lack of knowledge regarding the frequency of this malignant change, and the greater mortality from excision, over gastro-enterostomy, it is probably wiser in most cases to be content with gastro-enterostomy.

When one has a chronic ulcer which has not perforated, conditions are of course different. Here I believe the posterior ones all need a gastro-enterostomy, excision being too hazardous. The anterior ones however, can be easily excised. The ideal procedure would be excision, combined with a Finney gastro-enterostomy. This operation is ideal in that it removes the lesion, and restores the intestinal tube to its normal condition. It is unfortunate that the duodenum is often so fixed as to render this operation difficult, if not quite impossible. In the Journal of Medical Sciences, issue of October, 1915, Finney reviews the end results of 100 cases of gastro-enterostomy and 100 cases of gastro-duodenos. His conclusions favoring the Finney gastro-duodenostomy are of interest in this connection.

With reference to gastro-enterostomy, there are a few suggestions I would like to make regarding the technique which have materially improved my results. *First*—the opening of stomach should not be near the pylorus, but at the lowest part of the stomach, as the Hartman operation favors biliary regurgitation. *Second*—the posterior wall of the stomach should be fastened well down in the greater cavity, to prevent regurgitation. *Third*—hemorrhage from the new opening is best controlled by tying the individual vessels, and not trusting to a running suture alone. *Fourth*—in the opinion of doctor W. J. Mayo, continued sutures of silk or linen slough into the lumen, and are the cause of secondary ulcers, therefore the suture material should all be of catgut, or possibly interrupted sutures of lines in the outer layer. There seems to be a great prejudice against catgut, but with the improvement in sterilization and hardening, it is now easy to secure a catgut as fine as the usual silk suture, which will last for at least two weeks. In most of my recent cases I have used catgut throughout.

In conclusion I would offer the following: (1) One cannot produce obstruction by excision of the normal duodenum. (2) In the presence of gastro-enterostomy, complete division with suture is the only positive method of blocking the pylorus. (3) Clinically probably most methods of blocking are sufficient, especially in the presence of active ulceration of the duodenum. (4) Excision of the ulcer is the ideal procedure in all cases. (5) Gastro-enterostomy while not ideal, is frequently an operation of necessity.

In closing I want to express my appreciation of the help rendered me by Drs. Butsch and Evans, as the operations on animals were all performed by them. Also for the courtesy shown me by the New York State Institution for the Study of Malignant Disease, and the University of Buffalo where the experimental work was done. My obligation to Dr. Koenig for his interest in the X-rays and slides, is also great as you have seen.

BRAIN ABSCESS AND SINUS THROMBOSIS COMPLICATING CHRONIC PURULENT OTITIS MEDIA. RECOVERY.

G. Garthwaite Fisher, M.D.

Brooklyn-New York.

SOME rare or unusual features in this case report of a brain abscess and sinus thrombosis complicating chronic purulent otitis media, together with the fact that the patient made a recovery makes the narration of the history of the case worthy of record.

The patient, a girl, aged 9, gave the following history: The left ear has discharged since infancy. Of late years the discharge has been intermittent, stopping at times for periods of a month or two. For eight weeks before entering hospital the ear discharged more freely than before and odor was very foul. Then for three weeks the patient complained of severe headaches and pain behind the ear and in the forehead on the left side. She also had chills and a high fever for one week before coming to the hospital. The family doctor believed that these symptoms were caused by ear disease. Patient entered hospital July 15th, 1914, complaining more of pain in abdomen and lower extremities than of her ear condition. For that reason presumably, as well as on account of her general appearance, a temperature of 102 2-5 and a leucocytosis of 24,000, she was ordered to be prepared for immediate operation with the idea that the appendix was the cause of her symptoms.

A laparotomy performed that same evening by the house surgeon, proved the appendix to be in a normal condition.

For the next two weeks, until I saw her, patient ran a temperature varying from 99 to 106. On the eighth day in the morning it was 97 and that same evening after a chill, it had reached 106.

On July 29th, when the case came into my hands her temperature was normal, but she complained of severe headache and pain on left side of the cranium. Her general appearance was that of a very sick child, markedly wasted by long illness.

The following day, her temperature did not rise above 100, but a gradually increasing rigidity of the muscles of the neck, pointed to the necessity of an immediate operation.

It was not until several days after this operation that I succeeded in getting into communication with the child's guardian and in obtaining her history.

On August 1st, an operation revealed an eburnated mastoid, with few remaining cells. The mastoid antrum was filled with thick foul-smelling pus. When the lateral sinus was exposed, it seemed to be enveloped in pus which reappeared as fast as it was wiped away.

A probe revealed a pocket behind the sinus in the cerebellar region which contained about a dram of pus.

Instead of its usual pearly gray appearance, the lateral sinus wall was thickened and had a peculiar velvety look.

No blood flowed after an incision through this wall, and the interior of the lateral sinus contained clots and pus which extended in both directions. The mastoid tip, which did not share in the general hardness of the rest of the bone, was very necrotic. This was removed, and the radical mastoid operation completed by breaking down the posterior wall of the external auditory canal and converting the mastoid cells, antrum and middle ear space into one cavity.

An incision was then made along the anterior border of the sterno mastoid muscle, extending from the mastoid tip almost to the sternum. The fascia and muscles were next incised and separated until the sheath of the internal jugular was reached. After opening the sheath and isolating this vessel from the internal carotid and the pneumogastric, a ligature was applied above and below, and six inches were excised. The clot was found to extend to about the level of the upper border of the larynx.

The bulb of the internal jugular vein was not removed, as there was a large opening in the sinus wall for drainage and I did not think it justifiable to further prolong the operation or run the risk of producing a facial paralysis. The thrombus was partly removed by irrigation with normal saline solution. A counter opening was now made in the neck near the bottom of the first skin incision, into which a drainage tube was inserted and the neck wound was united by sutures. The whole mastoid wound was afterward washed with 95% alcohol and irrigated with hot normal saline solution and the sinus and cavity were packed with iodoform gauze. For the next week the temperature fluctuated between 98 and 104. The wound was dressed Aug. 5th and 6th, and repacked with the iodoform gauze. After that, redressed every second day. The patient developed several skin abscesses in different parts of her body which required opening, but after the first week, till her discharge from the hospital on September 6th, her temperature remained practically normal. On August 19th, 19 days after the first operation, the radical operation was completed by the closure of the post-auricular incision after lining the cavity with the skin of the auditory canal, supplemented by a graft taken from the thigh and applied to the fresh granulating surface. The whole was covered with a piece of gutta-percha tissue and packed through the meatus with a strip of iodoform gauze. The neck wound continued to discharge freely through the tube for a few days, then healed nicely leaving little more scar than if it had healed by primary union. The patient's general appearance also improved rapidly. She had been reduced almost to the state of a living skeleton and I had hesitated about removing a skin graft from a thigh which was little else than skin and bone.

Patient was discharged from hospital September 6th. The skin graft was successful and before long the operation cavity was completely dermatized. I have seen the patient frequently since that time, and about four months ago removed her tonsils and a considerable quantity of adenoid tissue. There has at no time been any recurrence of the ear discharge and her general health now appears excellent.

EDITORIAL

PROFESSION OR TRADE?

WERE one to trace step by step from its beginning the profession of medicine, he would find that first of all the physician was a priest and his calling part of the sacred rites. Indeed, one has only to go back to the medicine man of the Indians and of the African savage tribes to find in modern times the type from which the physician sprung; and his position set him apart and marked him as different from other men. Something of the priestly character adhered to the calling so long as the physician dealt directly with his patient, but with the advent of biological investigation and the rapid advance of laboratory methods, there has come a distinction. The personal touch has suffered as the patient has become more and more a subject for investigation rather than a human being needing comfort as well as treatment. The family physician is becoming largely a pleasant memory as his functions are being more and more subdivided and delegated to this specialist and the other. Whether this is altogether a gain for the patient is a question that is by no means decided. The loss of personal touch, the affection that grew fully as much from confidence in the man as from faith in his remedies, were a distinct asset to the patient that is not altogether compensated for by increased skill; and the loss to the physician himself is measurable in terms of character which, we are told, is better than much fine gold; for in the final balance it is the things of the spirit that count and not worldly possessions.

"That which a man makes or produces is his own, as against all the world—to enjoy or to destroy, to use, to exchange, or to give: no one else can rightfully claim it, and his exclusive right to it involves no wrong to any one else." This quotation from the letterhead of the American Economic League makes one wonder whether a leaven of pure selfishness has not crept into the profession of medicine that bodes ill for its better ideals. Are we to accept without reservation this purely materialistic interpretation? Can we truthfully say that the inheritance of service is only measurable in terms of cold cash? Do we practice the art of healing only for the money which it brings us? Is it true that we no longer do for the joy of the doing? In its ultimate analysis the sentiment that no one else can rightfully claim the product of a man's best thought and that it is his alone to use as he pleases is too distinctly materialistic to stand the light. It is essentially part of the doctrine of the Scribes and Pharisees. Service and self-sacrifice have been the well-spring that inspired such souls as Washington, St. Augustine, Rafael, Florence Nightingale, Pasteur, as well as that host of humble followers of the light whose only record is the loving remembrance of those to whom they consecrated their lives.

It is indeed hard in these times when wealth is so abundant, when fortunes are so quickly made, when the glamour of success is so ever present before the eye, to convince oneself that the ideal of making men better stands for more in the long run in its power to develop and build up character than any other employment; and yet there is in the land today an ever increasing and ever swelling tide of service. Day by day one reads of the efforts to better the social and physical condition of the poor, and public thought leans more and more toward providing for the unemployed. Honesty in public employ is demanded more and more loudly. It would seem that never has the profession of medicine had a more golden opportunity to demonstrate its boasted ideal of service to mankind. Are we to accept the teaching that the ideals we have inherited shall be made subsidiary to and regulated by our ability to make them pay? Shall we consciously lower the standard of the past? Faith in the men who make up the profession forbids the belief that such a thing can be. It must be that those who have professed such articles of faith have not as yet awakened to the fullness of their responsibility and that the time will come when a full realization of what the physician owes to himself and to his profession will teach him the difference between a profession and a trade.

H. G. W.

A SHATTERED IDOL.

OLIVER Wendall Holmes once said something to the effect that nature never did anything useless, or failed to adapt circumstances to conditions and that there was never a crack in a tavern bedstead but she had fitted an inhabitant to occupy it. We have ourselves noticed that the said crackdweller has kept up with modern progress and has accommodated himself to the iron bedstead of the poor even as to the luxurious brass one of the well-to-do. As time has gone by and custom has grown into habit, as we have sat by one bedside after another and have met him in passing, we have gradually passed from intollerance to tollerance and from tollerance almost to affection for the sociable and industrious cimex lectualis, otherwise known as the B flat or hard shelled Baptist. And now there comes forward a man of science, a cold, hard, iconoclastic cuss, to shatter another idol. He tells us that the nocturnal titillation of the cimex' caress is, as it were, a vampire sting. No longer may we rely upon Josh Billing's assurance that the fun of scratching more than half pays for the itch. No, tuberculosis and typhus are carried, so he says, by that same friendly bug. Must we accept this accusation? Must we feel that after long years of intimacy we have harbored a traitor as a bed-fellow? The accusation is doubtless false.

H. G. W.

"1916."

THE tenth year of the Long Island Medical Journal opens with brighter prospects for the future and with a record of continued advance. The increased number of contributions has made it difficult to publish them as promptly as might be desired. It is hoped that relief from the financial burden which has been a handicap in the past will make possible in the near future a permanent increase in the size of the Journal to meet this need.

At this time a word of appreciation is due Dr. Burton Harris, who has given largely of his time and efforts to make the department of Notes and News an active and valuable feature of the Journal. It is a matter of deep regret that his increasing duties have made it necessary for him to withdraw from this department. He carries with him the most grateful thanks of the Society.

Dr. Charles E. Scofield will assume the conduct of the Notes and News Column with the current issue, the success of which, in his hands, is assured.

H. G. W.

NOTE.

Readers of the Journal are reminded of the courtesy due to advertisers in these pages, whose support is largely responsible for the success of the Journal. Please be good enough to mention in your dealings with them that you have seen their advertisement in the Long Island Medical Journal. It will help all around.

H. G. W.

Society Transactions

TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

The 205th regular meeting was held on March 5th, 1915, with the President, Dr. O. Paul Humpstone, in the Chair.

Myoma of the Uterus.

Dr. McNamara: This is a myoma of the uterus which was removed by supravaginal hysterectomy. The interesting point in the specimen is that it is entirely unilateral and yet is not intraligamentous. At the time of operation it presented all the appearances of an intramural growth as seen from above but on examination we found the uterus lying transversely at the bottom of the specimen. The specimen is divided in half, the uterus is the lower portion, the upper is the tumor. The growth was removed without difficulty from Mrs. M. E. D., thirty-seven years old, married sixteen years, no children and no miscarriages; menstruation regular, twenty-eight day type, three to four days duration, with no pain. She was operated upon at the Hudson Street Hospital five years ago for what she says was an abscess of the ovary; but no sign of any such lesion was found at this operation. She came to the hospital complaining of pain in both groins and some distress in the lower abdomen. She made an uninterrupted recovery. The pathologist's report says: "The tumor is composed for the most part of smooth muscle cells. It is not very vascular. Some of the vessels show a proliferation of the endothelial lining. Other vessels are undergoing obliterative endarteritis. In some areas of the tumor are seen cells with large nuclei that seem to be different from the muscle cells and which strain a little more intensely. These cells are apparently hypertrophied uterine stroma cells. Beneath the serous coat is a small myoma. Diagnosis, myoma of the uterus."

Fibroma of the Ovary.

Dr. McNamara: The second specimen is a tumor of the left ovary removed from a woman twenty-one years of age who had given birth to a child three months before the operation. She was attended during the confinement by a midwife, but fever coming on about the seventh day, a physician was called. She made a good recovery from this infection and was out in three weeks. She had no symptoms except that she could feel the tumor and that it distressed her when she walked. Her convalescence from the operation was uneventful. The pathologist's report says: "The tumor is large, rounded, cystic at one place and the superficial vessels are prominent. It cuts with great difficulty and shows central softening. The ovarian stroma is largely replaced by fibrous tissue and in places this fibrous tissue has broken down centrally forming cyst-like cavities filled with albuminous fluid. Diagnosis: Fibroma of the ovary, undergoing cystic degeneration."

Dr. Gibson: Fibroma of the ovary is rare. About five years ago I found a fibroma of the ovary which had undergone calcareous infiltration. At that time I looked through the literature and it was surprising how few were reported. Kelly, in twelve hundred abdominal sections found fibroid tumors of the ovary only four times. In eight hundred eighty-five laparotomies at St. Peter's Hospital it was found five times, two being calcareous. They end either in calareous infiltration, which may be said to be an attempt on the part of nature to inhibit their growth, or show cystic degeneration, as this specimen does, and necrosis.

Dr. McNamara: One point I did not bring out. This woman evidently had this growth prior to the birth of the child. She was delivered without trouble and the fever she had at that time may have been due to the central necrosis taking place. She was of spare build and not very robust. It shows that a woman with a tumor can give birth to a child.

Dr. Humpstone: I saw a case of fibroma of the ovary in a young woman who was about four months pregnant. We operated and took out the ovary and the woman promptly aborted.

Dr. Judd: I have seen it stated that where there are double fibroids of the ovary you must leave at least a portion of one ovary, otherwise there will be nervous symptoms following.

Dr. Mayne: I should like to ask Dr. Gibson whether, in those cases he looked up, where there was calcareous degeneration of the ovaries, the menstrual function was interfered with. Two years ago I saw a young woman nineteen or twenty years of age who had never mensturated. On examination we made out bilateral tumors of considerable size, about one-half as large as the specimen shown here this evening. We opened the abdomen and removed both ovaries; both were completely calcareous. The pathologist reported that the ovarian tissue was completely destroyed. The girl was well developed, but had never menstruated.

Uterine Fibroma.

Dr. Mills: This patient, Mrs. L. B., aged forty-five, was a widow, para 3, with normal deliveries. She departed from her normal menstruation by having amenorrhoea for five months which marked the beginning of her menopause. Since then, from July to the present time she has flowed more or less continuously. During this period she has lost about thirty pounds, is very weak and unable to work. She has both subjective and objective symptoms of a marked anemia. She was admitted to the Gynecological division of the Kings County Hospital, in Dr. McNamara's service, on February 3, 1915. Her chief complaints were: loss of weight, bloody vaginal discharge, swelling of feet and shortness of breath. Her general physical examination was negative except the heart has a slight hemic murmur; the urine was negative. Vaginal examination showed the uterus retroverted, somewhat enlarged, soft and homogeneous, no nodules palpable. Cervix was normal. On Feb. 8th, she was prepared for operation with the intention of examination under ether and procuring scrapings for microscopic examination, and doing a hysterectomy or hysterotomy, depending upon developments. The differential diagnosis was between a submucous myoma and adenocarcinoma of the fundus. Under ether the uterus was easily replaced and no nodular masses could be felt. The curet, however, made the diagnosis easy for a sessile spherical mass was outlined corresponding to a submucous myoma. A supravaginal hysterectomy was done and the patient made an uneventful recovery. The pathologist's report reads: "Uterus opened longitudinally and showing two large round firm fibrous encapsulated masses that seem to have projected into the uterine cavity. The masses suggest myoma of the uterus. The tumor seems to be composed of fusiform small muscle cells. Many elongated rod shaped nuclei are seen. Other nuclei are short and plump. The tumor is very cellular and many of the fibres are packed close together, frequently interlacing and running in various directions. The fibrillar connective tissue between the muscle bundles is not abundant. The blood vessels are well formed and the tumor is apparently completely encapsulated. Diagnosis: Submucous myoma."

This specimen is one of two or three that I have seen recently. I was present when Dr. Deaver read a paper before the American Medical Association in which the subject was discussed. This woman had passed the child bearing age but if she had not would it have been advisable to try to save that function by removing the growths by hysterotomy and leaving the uterus? I should like to ask as to the expediency of removing small submucous fibroids. Dr. McNamara had a case of bleeding where the finger could not detect the growth. When it was operated upon it was found to be similar to this case and if we had performed a hysterotomy and enucleated the myoma we might have saved the patient the child bearing function.

Hysterotomy Followed by Sepsis.

Dr. Judd: The three cases I have to report will I think evoke criticism and I beg that you will criticise. They are intensely interesting to me and I have learned a lesson from them. In fact if I had not had other cases at the same time which did well I should have believed the fault was my own.

The first case was that of a young woman, a very poor specimen; she had lost most of her teeth; she had cardiac trouble, enlargement with a systolic murmur. She was treated in the medical service for a week but grew worse. She was pregnant four months, and was transferred to the gynecological service for the termination of the pregnancy. I did a vaginal hysterotomy, emptied the uterus and inserted a drain between the bladder and uterus. Twenty-four hours later there was a rise of temperature to 103.4 and the temperature ranged between 101 and 104 until she died eleven days after the operation. Examination per vagina six days after operation showed marked edema of the vulva and vaginal walls with a foul discharge. There was a mass above the left Poupart's ligament and tenderness and rigidity over the lower abdomen. The drain was removed. Four days later vaginal examination showed that the edema had extended, involving labia and perineum and anus. The blood culture was negative. A blood count showed an increasing leucocytosis until the time of death.

Myomectomy Followed by Sepsis.

The second case was that of a woman thirty-five years of age who had had five children. She was admitted to the hospital for menorrhagia and metrorrhagia existing for four months. She had had a child born nineteen months previous to admission to the hospital. Three years ago had had a vagino-plastic operation and amputation of the cervix. Vaginal examination disclosed genital hemorrhage, erosion of the new external os, fundus and body of uterus normal position, freely movable, and about the size of a two months' pregnancy; right ovary normal, left not palpable, but no mass, not tender. There were two histories of this case, one giving a regular menstrual history and the other showing a postponed period which raised the question of ectopic. The abdomen was opened and we found large varicosities in the right broad ligament; uterus enlarged to size of two months' pregnancy; adnexa normal. I regret to say that I curetted this patient before opening the abdomen. I thought I would take out a wedge shaped piece from the fundus down to the utero-cervical junction, leaving endometrium. The raw surfaces were covered by separating the bladder as in a hysterotomy and the uterus was anteverted by suturing the anterior peritoneal covering over the top of the new uterus. That night the patient had a chill and the temperature rose to 103.8. The next morning she had another chill and the temperature went up to 105. Since then the temperature has gradually dropped and is now normal. The condition looked like a toxemia but it could occur from manipulation. The respiration and pulse corresponded to the temperature rise. The first blood count showed a white blood cell content of 24,000, the second count two days after the operation showed white blood cell count of 32,000. The pathological report said: endometrium hypertrophied and hemorrhagic; pronounced interstitial fibrotic endometritis; hypertrophy of musculature and sclerosis of vessels.

Post Abortion Sepsis.

The third case was put down as a post operative sepsis with complicating phlebitis. She was married fifteen years and had had seven children, the last childbirth six years ago. Not an interesting menstrual history. Last menses ten weeks previous to admission. Two days before admission began to spot followed by free vaginal bleeding and abdominal cramps. She was examined in the admission room and the uterus was found enlarged to the size of a three months' pregnancy, cervix one finger dilated, soft. She was admitted as an inevitable abortion. Admitted at 6:30 p. m., temperature 99.8, pulse 76, respiration 22. Fetus expelled at 3:30 p. m., the following day, followed by chill and temperature 106°. Placenta at 6:30 p. m.; temperature dropped to 102°. At 9 p. m., the patient had another chill and rise in temperature to 107°. The next day temperature was 98° with another rise in the p. m., to 103.2, then gradually dropped to normal five days after admission. This patient eleven days after admission developed pain in the calf of the right leg with swelling of the foot and lower part of the leg and a diagnosis of phlebitis was made. Examination made at the time of discharge, three weeks after admission, showed cervix pointing slightly forward, uterus third degree retroflexion, retroversion, cannot be reduced, tender, no exudate. Slight tenderness middle of leg, right, posteriorly, no thickening. Blood culture negative. Blood count on admission: Leucocytes, 12,000; poly., 82; lymph. 18. Blood count after rise of temperature: leuco. 18,000; poly. 86; lymph. 14. Blood count before discharge: leuco. 13,500; poly. 60; lymph, 40.

Here was a case of post abortive sepsis without any operative procedure. Whether it was a criminal abortion or not we do not know, or whether the temperature was caused by manipulation at the time of examination. It is very interesting.

Dr. Hussey: I think that Dr. Judd's cases are most interesting, though unfortunate. A run of bad luck is not uncommon to the best of operators. It does not seem to me to be necessary to blame the operating room force, as suggested by a previous speaker, in these cases. They are responsible for some of our troubles, but not for all. We must be willing to review our unsuccessful cases with unbiased mind. Usually such a course will reveal some overlooked condition, some error in technique or a decision of questionable judgment. Referring to his case of hysterotomy, I would suggest that it is very easy to infect these cases where we do a wide dissection of the bladder from the uterus and vaginal wall. For this reason I have of late made the simplest sort of a straight incision with as little traumatism to the periuterine tissue as possible. This is easy in the early months of pregnancy but after the seventh month a more extensive dissection will be necessary. I am curious to know why Dr. Judd drained this case. I have not drained a hysterotomy case for several years. It seems to me that drainage is of doubtful value in these cases and may be a source of danger in that it sometimes causes the very complication against which we use it, namely infection.

The second possibility that comes to my mind in this case is injury of the bladder. It is a good practice to catheterize at the end of the operation. Bloody urine will show that the bladder has been injured and calls for the use of a retention catheter.

Referring to the second case, I would like to raise the question of the soundness of the surgical principle underlying this operation. It has always seemed to me that it is a risky thing to open a uterus through the abdomen after it has already been invaded from below. Such a uterus is, in my opinion, theoretically infected. I think that Dr. Judd could have done a hysterectomy with half the expenditure of time and skill, and with very much less risk to the patient, for he would have removed, instead of leaving behind, tissue that was at least suspicious.

Dr. Humpstone: The histories of these cases presented by Dr. Judd are interesting to me. It is a question whether these cases of hysterotomy can be attacked by the extraperitoneal route and by that means do away with sepsis. I recall two cases at the Methodist Hospital that became infected. One case, in the care of Dr. Beach, was an eight months' pregnancy in which he did a hysterotomy. It resulted in a virulent infection of the right side with abscess formation, the infection being through the parametrium. The patient died. I think that the idea that the cellular tissue around the uterus can take care of an infection better than the peritoneum is a fallacy.

Dr. Hussey: The cases presented by Dr. Judd are interesting. It has been my good fortune not to see trouble follow hysterotomy. I should like to ask Dr. Judd why he felt it necessary to insert a drain. I have had many and they have gotten along very well without drainage.

Dr. Mayne: I would like to mention some cases of infection which I could not locate. About four years ago all my cases at one institution became infected and we were at our wits' end to locate the source of the trouble. Nearly a month after the first case occurred the operating room nurse came into my office complaining with trouble with her ears. She had been suffering with double otitis media for more than one month. We made a smear and found a staphylococcus. Smears of the cases involved showed the same infection. She had infected the catgut by pulling the strands through her fingers which was a habit with her.

Dr. McNamara: I am glad Dr. Mayne has brought up the question of infection as it bears out my investigation in cases where sepsis has followed operation. Any of our attendents are apt to be infected in the upper respiratory tract and it is a question of how far we can prevent infection. I believe that in the case Dr. Judd mentions some patient has carried the infection.

Dr. Barber: I should like to ask Dr. Judd why he did a myomectomy in the case of fibroid of the uterus in an elderly woman rather than a hysterectomy. The statistics given by Cullen show a decidly higher mortality in myomectomy than in hysterectomy.

Dr. Judd: I said that I ought to consider myself suspicious were it not a fact that these cases were but a small proportion of the work under my care at the time. Dr. Hussey asks why I used a drain. Others consider a drain necessary in hysterotomy and I have been in the habit of using it. He speaks of his method of going up through the anterior wall of the uterus. I have been unfortunate enough to have a vesicovaginal fistula following the technique described by the doctor and subsequently I have been a little more careful.

As to the presence of an injured bladder: I am sure it was not injured. The reason I did the curettage was as a diagnostic procedure, not knowing whether it was an incomplete abortion or an ectopic. I should like to ask if I should have done it from above, a la Childs. I think the patient would have been better off had I done a hysterectomy. She was a young woman and that was my reason for doing a resection.

Cesarean Section; Observation of Previous Scar in Uterus.

Dr. Pfeiffer: It may be recalled that about one year ago Dr. Judd reported before this Society, a patient who, while in his service awaiting cesarean section for an absolute contraction, delivered herself of a premature fetus without any special disfomfort. The placenta being retained, it was removed thirty-six hours later, when the uterus was found to have ruptured on its anterior wall at the placental site. The uterus removed a few hours later was found to have had practically nothing but thin serosa covering the site of the former scar, which had been eroded and softened by the insertion of the placenta beneath it. The discussion brought out the fact that other operators had had the same misfortune, regardless of technic or suture material, even in cases running a normal post-operative course.

A recent section afforded me the opportunity to examine the scar made two years ago for a similar delivery and closed as was the above with a single layer of #2 plain gut interrupted. This latter case falling into labor some hours prior to the time selected for an elective section, had two or three hours of strong pains before operation could be done. The omentum was adherent to the parietal and visceral peritoneum, and on partial removal from the uterus showed a firm scar for the entire thickness of the uterine wall, in no wise weakened by her attemps at delivery. The second incision into the uterus was made about an inch to the left of the former one and was closed in a similar manner.

The insertion of the placenta under the scar does not always impair its integrity as shown by Harrar's report from the Lying-in Hospital of six cases of subsequent section with the placenta so located, without disaster, and he believes the difficulty to be rather the weakening due to infection and the oft repeated intra-uterine douches of the past. Rupture in his observations occurred, not through the scar but through uterine tissue adjacent to the scar, especially so if two scars lay close together with consequent weakening through partial loss of blood and nerve supply. He rightly feels that in doing a section upon a woman, who, because of present conditions faces morbidity if not death, there is a probability of getting a poorly healed scar that makes future pregnancies severe risks. Again, rather than have two scars with a weak wall between it is better to excise the old scar. His comment about intra-uterine douches need not be quoted because they have been abandoned by almost everybody.

Dr. Judd: I am glad that Dr. Pfeiffer has had an opportunity of seeing one of the scars where the incision in ceserian section has been sewn up with plain gut. It has been my custom for many years to use plain gut. I am rather partial to plain gut. I use very little chromic gut.

Dr. Ralph M. Beach then read a paper entitled: *Placenta Previa.*

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

DECEMBER, 1915

MINUTES OF THE 95TH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS

HELD DECEMBER 21ST, 1915.

The President, Dr. Russell S. Fowler, in the chair. There were 111 present. The meeting was called to order at 8:35 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

John J. Cahill, 472 51st St.; Albany, 1912; proposed by H. W. Benoit; seconded by Membership Committee; June '15.

Herbert C. Fry, 356 9th St.; L. I. C. H., 1898; proposed by J. J. Sheehey; seconded by Membership Committee; Mar., '15.

H. W. Mayes, 6th Ave. and Berkeley Place; Cornell, 1912; proposed by R. Durham; seconded by H. K. Bell; Nov., '15.

George B. Reitz, 171 Sands St.; L. I. C. H., 1913; proposed by T. B. Hegeman; seconded by A. J. Solomon; Oct., '15.

Wilhelm E. Stern, 130 Ashford St.; L. I. C. H., 1909; proposed by F. J. Burger; seconded by Membership Committee; Oct., '15.

John E. Wade, 908 Greene Ave.; Univ. N. Y., 1871; proposed by F. W. Bradner; seconded by Membership Committee; Oct., '15.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

John J. Colgan, 191 Nassau St.; L. I. C. H., 1882; proposed by S. J. McNamara; seconded by Membership Committee; Oct., '15.

James T. Gallagher, 449 Lafayette Ave.; P. & S., N. Y., 1892; proposed by S. J. McNamara; seconded by Membership Committee; June, '15.

Harriet W. Hale, 306 Decatur St.; N. Y. M. Coll., 1896; proposed by F. W. Bradner; seconded by Membership Committee; Oct., '15.

William Herbert, 1240 Bushwick Ave.; L. I. C. H., 1909; proposed by S. H. Lutz; seconded by Membership Committee; June, '15.

Thomas U. Joyce, 700 Union St.; L. I. C. H., 1881; proposed by S. J. McNamara; seconded by Membership Committee; Oct., '15.

Patrick J. Kennedy, 1766 W. 8th St.; Queen's Univ., 1911; proposed by S. J. Post; seconded by Membership Committee; Oct., '15.

Johann W. Mock, 328 Central Ave.; Univ. Kiel, 1901; proposed by C. Mueller; seconded by G. Buttschardt; Oct., '15.

Chester T. Stone, 62 Pierrepont St.; L. I. C. H., 1915; proposed by L. F. Warren; seconded by A. Murray; Oct., '15.

Binford Thorne, 162 Halsey St.; Univ. Nashville, 1899; proposed by S. J. McNamara; seconded by Membership Committee; Oct., '15.

Applications for Membership.

Applications for membership were received from the following:

John M. Auwerda, 332 Jay St.; L. I. C. H., 1912; proposed by C. F. Pabst; seconded by Membership Committee; Dec., '15.

Chas. F. During, 2101 Voorhies Ave.; P. & S., N. Y., 1898; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

George W. Hart, 3111 Glenwood Road; P. & S., N. Y., 1901; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

Otto V. Huffman, 89 Joralemon St., P. & S., N. Y., 1903; proposed by W. F. Campbell; seconded by F. E. West; Dec., '15.

David Last, 335 So. 5th St.; L. I. C. H., 1913; proposed by W. H. Best; seconded by Membership Committee; Dec., '15.

Jacques Loewe, 71 McKibbin St.; L. I. C. H., 1897; proposed by W. H. Best; seconded by Membership Committee; Dec., '15.

Frank F. Lyne, 3049 Ocean Ave.; P. & S., N. Y., 1903; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

Frank T. Mangold, 1301 Bushwick Ave., L. I. C. H., 1912; proposed by W. H. Best; seconded by Membership Committee; Dec., '15.

Filippo Morvillo, 771 Union St.; Univ. Naples, 1899; proposed by H. M. Mills; seconded by Membership Committee; Dec., '15.

Geo. A. Sheehan, 22 First Pl.; Fordham, 1913; proposed by J. S. Sheehey; seconded by Membership Committee; Dec., '15.

William Siegmeister, 1978 65th St.; Fordham, 1913; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

William Clarkson Waggoner, 167 Taylor St.; Miami Med. Coll., May 1, 1903; proposed by S. M. Strong; seconded by A. M. Judd.

Charles F. McCarty, 418 E. 28th St.; Fordham, 1913; proposed by J. R. Kevin; seconded by J. A. Lee.

John H. Flynn, 493 Linwood St.; Tufts, 1913; proposed by J. R. Kevin; seconded by J. A. Lee.

Daniel Edward Welch; 135 St. Marks Ave.; Tufts, 1910; proposed by J. R. Kevin; seconded by J. A. Lee.

John B. Byrne, Jr., 224 A 6th. Ave.; Long Island College. 1903; proposed by H. M. Mills; seconded by Membership Committee.

John J. O'Keefe, 124 Linden Ave.; Long Island College Hosp. 1908; proposed by E. B. Wilson; seconded by S. J. McNamara.

General Business.

On recommendation by Dr. Stephen H. Lutz, it was unanimously voted that the dues for the ensuing year be $10.00 annual dues for the County Society plus $3.00 for the annual per capita assessment for the Medical Society of the State of New York.

Dr. Charles Waldo Stickle presented the following memorial:

Mr. President:

It is with great regret that I report to the Kings County Medical Society the death of a former president, Dr. John E. Sheppard, at Woodstock, Connecticut, on September 13th, 1915.

John Evans Sheppard, M.D., F.A.C.S., was born near Greenwich, Cumberland County, N. J., June 1, 1859, son of George W. and Ruth Bacon Sheppard.

Educated, Yardley Warner Private School, Westtown School, Haverford College, B.A.; University Pennsylvania, M.D. Interne Pennsylvania and University Hospitals, 1882-83. Licensed, New Jersey, 1883 and New York, 1889. General Practice, Atlantic City, 1883-88; Health Officer, Atlantic City, 1885-86. Attending Physician, Mercer Memorial Home, Seashore Annex of Friends' Insane Asylum, of Frankford, Pa., at Atlantic City, 1884-88.

Post Graduate in various Ear, Nose and Throat Clinics in Berlin, Munich, Vienna, and London, 1888-89. Aurist, Brooklyn Throat Hospital, 1889-92; Assistant Surgeon and Surgeon, Ear Department, Brooklyn Eye and Ear Hospital, 1890-91, then Consulting Aurist.

Instructor, Otology, New York Post Graduate School and Hospital, 1890-92; Professor, Otology, New York Polyclinic, 1893-96. Professor, Otology, Long Island College Hospital Medical School, 1895 to time of decease. Aurist and Consulting Aurist, Brooklyn Hospital, 1902, to time of decease. Aurist and Consulting Aurist, Methodist Episcopal Hospital, 1905 to time of decease; Attending Aurist, Jewish Hospital, 1906-11, since then Consulting Aurist. Aurist, Long Island College Hospital, 1903 to time of decease. Consulting Aurist, St. Catharine's Hospital, 1911 to time of decease. Day-Kimball Hospital, Putnam, Connecticut, since 1905. Fellow American College of Surgeons. Member, American Otological Society; American Laryngological, Rhinological and Otological Society; American Medical Association; Academy of Medicine, New York; New York Otological Society (President 1908-09). New York State Medical Society; Kings County Medical Society (President 1904-05); Brooklyn Pathological Society; Associated Physicians of Long Island; Associated Phy-Brooklyn; Practitioners' Club.

Hamilton Club and Winter's Night Club.

John E. Sheppard typified the best there is in manhood and in medicine. One of our greatest teachers, he believed in thorough preparation for his work. At all times ready to impart his knowledge to others qualified to receive it. Internationally recognized as an authoritative writer on otologic subjects, his monographs covered about all on this branch of medicine and surgery.

To those privileged to know him intimately, his passing will be a cause for mourning the loss of a learned scholar, a cultivated gentleman, a good citizen, an entertaining companion and a beloved friend.

He leaves a wife and one daughter.

William Browning,
Nathan T. Beers,
C. W. Stickle.

On motion by Dr. William J. Cruikshank, it was unanimously voted that in view of the great loss which the Society had sustained in the death of Dr. John E. Sheppard, that the above memorial be spread upon the minutes and that a copy be sent to the family.

The following amendment to the By-laws was unanimously adopted:

"Chap. 1, Sec. 4. Stated Meetings shall be held on the third Tuesday of each month, except in the months of June, July, August and September, when there shall be no regular meeting. . . . etc."

The following resolutions were read by Dr. William Francis Campbell and adopted by unanimous vote:

WHEREAS, Dr. Lewis Stephen Pilcher will in March, 1916, have completed fifty years of labor in the profession of medicine, and

WHEREAS, During all these years he has stood among us an exemplar of sturdy manhood, unflagging industry, rich scholarship and uncompromising integrity, and

WHEREAS, In his versatile attainments as soldier, surgeon, teacher, author and editor, he has received not only national but international recognition,

Resolved, That the undersigned deeply conscious of Dr. Pilcher's contributions to manhood and to medicine and believing that this unique event presents a rare opportunity for the medical profession of Brooklyn to honor itself by a public recognition of its most distinguished colleague; do hereby request that the Medical Society of the County of Kings appoint a committee of three with power to arrange for a suitable celebration of the "Lewis Stephen Pilcher Semi-Centennial," that this committee be authorized to add to its number as many as may be deemed necessary to properly represent the various medical interests of this Borough; and further

That the appointment of this committee be the first act of the President-elect for 1916.

J. BION BOGART,
WILLIAM FRANCIS CAMPBELL,
J. RICHARD KEVIN,
WALTER A. SHERWOOD,
RUSSELL S. FOWLER,
CHAS. N. COX,
O. A. GORDON,
JOHN A. LEE,
WILLIAM LINDER,
A. M. JUDD,
H. BEECKMAN DELATOUR,
W. B. BRINSMADE,
JOHN COWELL MACEVITT,
J. W. FLEMING,
P. M. PILCHER,
HENRY A. FAIRBAIRN,
RAYMOND P. SULLIVAN,
RALPH H. POMEROY,
JOHN OSBORN POLAK,
O. P. HUMPSTONE.

Scientific Session.

Lecture: "Scoliosis." (With lantern slide demonstrations.) By Edville G. Abbott, M.D. of Portland, Me.

Discussed by Drs. Walter Truslow, Jacques C. Rushmore and Charles D. Napier.

On motion by Dr. Truslow a rising vote of thanks was tendered Dr. Abbott.

Election of Officers.

Dr. Warren L. Duffield, Chairman of the Board of Tellers, presented the following report:

Total vote cast, 111.

For President, * Ralph H. Pomeroy, received 110.

For Vice-President, * Albert M. Judd, received 111.

For Secretary, * Charles E. Scofield, received 111.

For Associate Secretary, William A. Gillen, Jr., received 41.

* Lewis P. Addoms, received 59. 11 defective.

For Treasurer, * Stephen H. Lutz, received 110.

For Asso. Treas., * Robert L. Moorhead, received 111.

For Directing Librarian, * Burton Harris, received 110.

For Censors (five to be chosen), * John E. Jennings, received 85; * Fred'k C. Holden, received 78; George D. Hamlin, received 47; Siegfried Block, received 15; S. Meredith Strong, received 11; * John G. Williams, received 71; Geo. H. Reichers, received 44; Ralph M. Beach, received 47; * Frank H. Knight, received 52; * Nathaniel P. Rathbun, received 51. 7 defective.

For Trustee, * Russell S. Fowler, received 110.

For 11 Delegates to the State Society for 2 years (1916-17). * O. A. Gordon, received 109; * Paul M. Pilcher, received 109; * O. Paul Humpstone, received 109; * Wm. J. Cruikshank, received 109; * C. H. Watson, received 108; * E. A. Griffin, received 111; * E. H. Fiske, received 110; * W. A. Sherwood, received 109; * J. W. Fleming, received 109; * John A. Lee, received 110; * Russell S. Fowler, received 109.

For 23 Alternate Delegates for one year: * Alfred Bell, received 111; * W. C. Braislin, received 111; * C. N. Cox, received 111; * G. E. Deeley, received 111; * Chas. Eastmond, received 111; * H. A. Fairbairn, received 111; * R. H. Fowler, received 111; * C. H. Goodrich, received 111; * G. D. Hamlin, received 111; * J. C. Hancock, received

111; *Burton Harris, received 111; *J. C. Kennedy, received 111; W. Linder, received 111; *J. M. MacEvitt, received 111; *R. L. Moorhead, received 111; *Alfred Potter, received 111; *M. E. Potter, received 111; *J. S. Read, received 111; *R. M. Rome received 111; *W. S. Shattuck, Jr., received 111; *H. A. Wade, received 111; *H. G. Webster, received 111; *R. W. Westbrook, received 111.

The names of those elected are preceded by an asterisk (*).

Meeting adjourned at 11 p. m.

Burton Harris,
Secretary.

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PUERPERAL INSANITY.*

Eliot Bishop, M.D.

Brooklyn-New York.

THE request from the secretary of this society is a command when he asks me to read a paper, otherwise I should be more profuse in my apology for the modest effort I present to you to-night. For me to present to the gentlemen of achievement before me any of my rare dashes into the field of major procedure in gynecology or obstetrics would be farcical and I was casting about for something of interest for us all to think about together to-night when two post partum patients in the Low Maternity one afternoon developed mental disturbances.

As we must all admire the German attitude of continually interrogating, so we must, when something unusual occurs, say "Why?" and "When?" and then become Yankees again and say "What are we going to do about it?" Every few years we must take stock of just such questions and it is perhaps a reasonable duty for some of the younger and less active members of this society like myself to make the inventory.

DEFINITION.

Is it an entity? In *Peterson's* "Obstetrics," Lewis of Chicago tells us that the opinion is gaining ground that it is a coincidence and without etiological relation to maternity and that to childbearing can we probably assign only an exciting etiologic relation in the production of an outbreak of insanity. The study of so-called puerperal insanity then resolves itself into the study of the different types of mental disorder as they may occur and reveal themselves in a pregnant parturient or puerperal woman. (Pp. 825-830.)

Lee, of Manchester, England, in his exhaustive treatise "Puerperal Infection," refers very casually to the maniacal symptoms of the infection. (P. 290.)

Williams in his "Obstetrics," however, speaks assuredly of puerperal insanity and gives definite etiological factors, two of which are the result of childbearing. (Pp. 915-916.)

Hirst in his "Practice of Obstetrics," feels that it is an entity and more distinctly a disease of this period because of the etiological features he mentions and which will be referred to later. (P. 248.)

Webster, in his "Text Book of Obstetrics," discusses it as an entity under a separate heading, but not by any etiological factor does he separate it from other psychoses. It is in the frequency of its occurrence, that he quotes from Clouston of Edinburgh, *viz.*, one in 400 labors, in which Hirst concurs that we may infer it is a distinct disease. (P. 613.)

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*Read before the Brooklyn Gynecological Society, April 2, 1915.

Berry Hart of Edinburgh, in his "Guide to Midwifery," says "insanity may come on in women" while childbearing and refers to predisposing causes, but gives no well defined picture of the condition. (P. 574.)

Wright of Toronto in his "Text Book of Obstetrics," refers to insanity of pregnancy: symptomatically ordinary insanity, but etiologically speaking, the statement that constipation is frequently marked is the barest allusion. (P. 430.)

De Lee of Chicago says, "During the puerperium and lactation, insanity is a not infrequent disease," and from his discussion of it he very apparently holds it as an entity. (P. 373.)

Tweedy & Wrench discuss insanity at more length than any of the other authors and must be convinced that it is a definite disease. (P. 401.)

Edgar refers to the "essential puerperal psychoses" and discusses their etiology and time of occurrence very definitely. (P. 800.)

The most comprehensive work on this subject, however, is that in the Journal of Obstetrics & Gynecology of the British Empire, of Robert Jones, Superintendent of London County Asylum, Claybury, England, and to quote him is most convincing. "Of the specially puerperal cases—and it is in this period that I recognize a special form of insanity—more suffered from mania than melancholia."

Having covered a fair field of literature in this subject of definition we must now seriously consider the question—Have we or have we not a definite disease? Shall we go on to discuss this subject at greater length or shall we put it in the category of a broken wrist or an attack of diphtheria, either of which might occur shortly after the time that any woman had had a baby? If I should say the latter, I should have to conclude this paper and take my seat. So let us go a little farther along and discuss its frequency before the question is answered.

FREQUENCY.

In reference to its frequency, we find among the authorities a great deal of variation and it again shakes our faith in the value of statistics.

In an edition of forty-one years ago of Fordyce Barker's "Puerperal Diseases," he gives the ratio of cases of puerperal mania to total labors in Bellevue as 1-80. I have purposely referred to the age of this book because I shall refer to it again in discussing an attributed etiological factor. Not long after this work appeared, McLeod took the statistics of birth in England and Wales for four years (1878-1882) and found the proportion of women committed for puerperal insanity was 1794—3,500,000 labors, or 1-2000. Baker himself was interested in the variation of statistics and explains part of the difference from the fact that there were many unmarried women at Bellevue; and while there were also among the foreign records, in the old countries, the fact of being a mother and not a wife was felt far less keenly, if at all than in America! (Pp. 160-191.)

Williams refers to more modern statistics of Berkley and of Jones, who noted it in 1 in 616 and in 1100 labors respectively, but Williams' own experience has been less frequent.

Hirst states "about one in four hundred women confined become insane"; a flat if not grammatical statement, and this proportion agrees with, if not taken from, the experience of Clouston of the Edinburgh asylum. Hanson's figures are about the same, 1-386.

Let us get at this subject of frequency from the opposite point of view. Among cases of insanity how many are associated with childbearing? Clouston of Edinburgh, among 1,500 women, found 10 per cent were classified as suffering with puerperal psychoses and most of the earlier figures (and here we have the first real thought) before the antiseptic era give similar percentages—the New York State hospitals from 1888 to 1895 give only 5 per cent as puerperal in origin. Before we draw a too hasty conclusion, let me quote Lane based on observations in the Boston Insane Hospital for ten years, "that insanity associated with childbirth occurs only one-half as frequently as does insanity among women in general of childbearing age. The vast majority of women who become insane are between the ages of twenty and fifty. The task of bearing and nursing children occupies a considerable portion of the time of the average woman during these ages. Therefore, we should expect a large proportion of cases of insanity to begin during such time even without causal connection." According to Lane's view the childbearing process gives a certain degree of immunity to insanity instead of predisposition thereto!

On the other hand he points out that there are many more single than married women in asylums—perhaps unmarried on account of their defects. *Hirst* says of all cases of insanity in women about 8 per cent have their origin in the childbearing process, while *Berry Hart* gives the lower percentage of five. *De Lee* in his textbook—the most recent at my command—gives the high percentage of 10-18 of female inmates affected at this time.

The most reliable figures I have yet obtained came recently to hand through the courtesy of Dr. Ziegelman, one of the resident psychiatrists at Kings County Hospital and he tells me that of 454 female admissions to the observation ward there from October 1st, 1914 to March 18, 1915, there are twenty-six cases of puerperal insanity, practically 5¾ per cent. These are not very different, except suggestively lower than Jones of London who in 1903 found from 6.4 per cent, private, and 8.1 per cent poor class patients then in the London Asylum.

With so much information, vague and meagre as it is, let us pause a moment and weigh the evidence. As our ideas of pathology change with time, so must our viewpoint as to morbidity and the most recent ideas must settle such questions.

Williams, Hirst, Edgar, Webster, De Lee, Jones and Tweedy & Wrench refer to it absolutely as a disease. Wright of Toronto and the Englishmen Berry Hart, and Lea are more vague and only Lewis of Chicago calls its occurrence a coincidence. When we consider its frequency, if only we accept the very conservative estimate of Williams and the definite figures from McLeod of England of 1-2000 births and are not so radical as Hirst the obstetrician and Clouston the Edinburgh alienist who state 1-400, to say nothing of Fordyce Barker's 1-80, we must feel that there is more than a coincidence and if we consider the large percentage who are confined to asylums suffering from it, I feel we have all the evidence needed.

Causes must be studied before we can put pathology on a sound basis, to say nothing of diagnosis and treatment. Here again we find many authorities in disagreement and at times extremely vague.

Williams, of the school that, I think we all feel has, through the laboratory, magnified the science of medicine perhaps sometimes to the detriment of its art, says:

"Puerperal psychoses may be due to one of three causes: infection, auto-intoxication, or direct lability of the nervous system. Of these infection is by far the most important. This fact has long been recognized, but it is only of late that the bacteria concerned have been identified and then only in a small proportion of cases. In two of the three instances which have come under my observation, the infection was due to the streptococcus and in the third to the streptococcus and colon bacillus."

Berkley likewise reports a case due to the organism first mentioned. Auto-intoxication is also a frequent etiological factor and it is probable that the vast majority of mental disarrangements following eclampsia are due to this condition. Ordinarily, insanity is regarded as a rare complication of eclampsia, though Olshauser observed it in 6 per cent of his 515 cases. According to Hansen and Picque infection and auto-intoxication are responsible for more than 80 per cent of all cases, while the remainder are to be attributed to other causes, occurring particularly in women afflicted with hereditary tendencies, "the exciting cause of the insanity being shock, extreme mental depression or the rapid loss of a large quantity of blood."

The general trend of investigation of etiology and pathology has been of course to ascribe definite tangible factors as the cause of definite organic changes and we hear less and less of idiopathic diseases and functional conditions, and while the view of Williams may seem to be almost too definite, please contrast it with the causes ascribed by Hirst, which he divides into "predisposing—the nervous excitement of gestation in women predisposed by hereditary influence to mental breakdown, great reduction in physical strength and prolonged mental strain or worry * * * ; the exciting causes may be exaggerated anaemia, as from prolonged lactation, septicaemia; albuminuria; profound emotion or exaggerated fear of impending danger; remorse and shame of illegitimate pregnancy; the grief of a deserted woman; accident or hemorrhage; great physical or mental exhaustion. In my experience insanity in the childbearing woman has almost always resulted from some profound emotion."

Webster of Chicago says: "Frequently there is a predisposing cause—e.g., bad heredity and prolonged mental or physical strain. Anaemia, sepsis, albuminuria, marked emotional disturbance and the pain and excitement of labor."

Berry Hart only mentions the predisposing causes of a neurotic constitution, too frequent pregnancies, too prolonged lactation, and in some cases the shock of a seduction ending in conception.

Wright of Toronto, as I have stated before, says: "Constipation is frequently very marked,"—whether he means as a cause or a symptom is problematic.

De Lee of Chicago says: "Puerperal infection, mastitis, eclampsia and allied toxemias, post partum and other hemorrhages, especially if grafted on a bad heredity, exhausting labor and the drain of lactation are the most common causes. The attack may be developed by a violent psychic shock, such as the death of husband or child."

Tweedy & Wrench of Dublin give us nine subsidiary causes—drink, toxemia, post eclampsia, acute pain (the perineal stage), sepsis, severe hemorrhage, prolonged lactation, no marriage and heredity, laying emphasis on sepsis and hemorrhage in the puerperium.

Edgar says that "there is no doubt that the presence of puerperal sepsis in many of the cases is something more than a coincidence. Alienists assure us that since the introduction of antisepsis into midwifery the frequency of puerperal insanity has been marvelously diminished. Many cases of this type of psychoses are said to exhibit more the nature of delirium—such as is seen, for instance, in typhoid fever—than of actual insanity. Again the coincidence of severe local infection has often been remarked, and gives color to the toxic theory; while a further coincidence of insanity of the puerperium with puerperal mastitis, phlebitis, and other inflammations remote from the genitals helps justify the assumption of this point of view. Of other special contributory factors may be mentioned the exhaustion which follows delivery, extreme prostration being a well-known cause of certain psychoses or of low delirium. In this connection should be mentioned the influence of post-partum hemorrhage. In women already disposed to insanity the physiological adjustment which follows childbirth is doubtless sufficient to set up mental disorder. Other conditions which excite puerperal psychoses are the painful emotions.

Lewis of Chicago, who, we must remember, does not call this a medical entity, says: "The inciting factor of insanity arising during the puerperal period are due, in from 70-80 per cent of the cases to either toxemia or infection. In the remainder no exciting cause beyond the general disturbance due to the bodily state can be assigned, * * * . The insanity arising in the lactation period is essentially due to exhaustion and inanition," occurring in women of the poorer, harder working, more improperly fed classes. "General weakness from other causes, such as may follow severe post-partum hemorrhage or recovery from septic infection, may be the exciting element."

Before we close the subject of its occurrence and cause, let us consider the illegitimacy and the number of the pregnancy, etc. Of 203 strictly puerperal cases collected by Jones of London, about 10 per cent were single and 33 per cent were primiperal. One patient had an attack of insanity after each of her twelve children and another with each of nine, both becoming subject to chronic incurable insanity at the climateric. In lactation cases the insanity did not commonly follow a first confinement, but appeared to be due to the strain of frequent pregnancies and the exhaustion of long continued nursing. Puerperal insanity is most common between twenty-five and twenty-eight; lactational between thirty and thirty-four.

Jones also gives data pro and con as to the causation of this condition. One of his investigations found always negative blood cultures while others have found, as did Williams, streptococci, staphylococci and the colon bacilli. It was rare for any of his cases to have fever and some were admitted as early as the second day. He also noted in some cases the signs of endo-toxin development. But he asks, "if these cases be toxic (and he means either chemical or bacterial) how is it that insanity occurs most often after the first confinement?"

Before we proceed to the subject of symptoms and pathology, let me suggest these conclusions: Our disease is decreasing in frequency, as all evidence shows us. We coincidentally are increasing our aseptic technique and obstetric skill and we are continually recognizing the different types of toxemias both bacterial and chemical, more quickly, with resultant more rapid institution of treatment. On the other hand the strong mental shock and emotions that come to women in connection with, or as a coincidence to, childbirth are getting no less in this world of ours and I feel that we must all agree that sepsis and toxemia in the puerperal and anaemia in the lactational types of insanity are our real causes:—the emotional factors being secondary or only the exciting causes in the majority of cases. The other cases are, however, those of lability of the mental and nervous systems of probable types and with the same exciting causes.

The pathology of many morbid mental states is, I am sure, poorly defined and not well worked out. Jones, in his very exhaustive, though hardly recent article in 1903 gives us, however, very suggestive thoughts on the subject. "Immediately after confinement the morbid and effete material which is taken into the maternal circulation during early uterine involution, must tend to produce in the predisposed a profound irritation of the nervous system, and especially so should secretion and excretion be modified by interference, chemical or bacterial, with the normal functions of the venous, lymphatic and other excretory organs." It is in the early stage of puerperium, the stage of septic infection, and by that I mean all bacterial disturbances, that the most violent delirium occurs.

The lactational type shows impoverished blood supply, uterine sub-involution and general cachectic condition.

SYMPTOMS.

Williams has found that the puerperal psychoses are usually characterized by great excitement during the first few days, associated with all sorts of hallucinations. Later the maniacal symptoms disappear and the patient passes into a condition of depression with frequently suicidal tendencies.

Lewis has found that there are seldom any prodromal symptoms in the infective variety. Confusion, with hallucinations, usually of sight and sound, and great motor and mental excitement, appear; later motor agitation, subsultus, expressions of fear and uneasiness. Toxic cases are similar, but not so severe. Progress toward recovery is gradual—hallucinations disappear and lucid intervals occur. Lactational cases come on slowly, hallucinations at first few and later more constant; not a type of melancholia, but a mild, exalted mania, with frequently suicidal tendencies.

Hirst's cases have been of mania, melancholia or profound lethargy, stupidity and mental confusion and *Webster's* experience has been about the same.

Edgar feels that while most of the cases have been classed as mania, they are in reality hallucinatory insanity.

De Lee has found melancholia with suicidal intent most common, but has also observed mania with infanticidal tendencies, while *Vinay* holds that the maniacal forms are the most frequent.

Tweedy & Wrench have found that insanity of the puerperium is always associated with either severe anaemia from hemorrhage or with sepsis. The patient is first irritable and uneasy about unknown dangers. She has a headache, is constipated, she may refuse food or to see her child or husband and sleeps badly and finally becomes definitely maniacal and may have suicidal tendencies. During lactation the patient becomes gloomy, sleeps badly, and is constipated. Definite melancholia develops with delusions and suicidal tendencies.

PROGNOSIS.

All authorities disagree markedly on this most important aspect. Williams tells us that the progress is three to six months and if longer the prospect is very poor, 20-40 per cent fail to regain mental equilibrium and 5-10 per cent die, this high mortality due, he feels, to the underlying infection and not the mental derangement itself, and with these figures Hirst is in practical accord.

Lewis tells us 25 per cent of the infection cases die, but the progress of toxic cases is not so bad. Death occurs usually from sepsis or the exhaustion on account of the motor excitement. Lactational cases recover in 50 per cent and they take eight to nine months.

Webster quotes from Clouston of Edinburgh that 75 per cent of his cases have recovered; one-half of those in three months and 90 per cent in six months, and occasionally recovery takes place after years of impaired mentality and, surprisingly, he states that there is probably a larger number of recoveries in acute and severe cases than in mild ones. *De Lee* states that the prognosis is fair—recovery in the majority of cases in from six weeks to six months.

Edgar tells us that exhaustion is the usual cause of death but recovery is the rule even from the insanity; if not, it goes on to a terminal dementia or paranoia. A high pulse rate is a bad sign.

Berry Hart says the prognosis is good under proper treatment and the return of menstruation is such a good sign that emmenagogues should be employed.

Tweedy & Wrench say some 60 per cent of all cases recover, but if, as the patient gets fatter and stronger the mind does not improve, the prognosis is bad.

In the subject of treatment our authorities again differ, but not in the usual way. *Webster* briefly dismisses it with advising an asylum, as does *Hirst,* except in cases of refusal of families or friends to commit the patient, when general symptomatic treatment is necessary. *Edgar* and *De Lee* both are no more explicit. *Berry Hart* with his regard for the return of menstruation, says when the patient gains weight to use hot sitz baths, aloes and iron pills and binoxide of manganese two grains in pills thrice daily should be administered. In lactational insanity immediate weaning of the baby is indicated. *Williams* feels that it is a good deal of an obstetric problem because of its presumably infective causes and we must search for the underlying etiologic factor for the cause. The symptomatic treatment he refers to only generally and suggests, if immediate improvement is not seen, to refer to a psychiatrist.

Tweedy & Wrench logically prescribe rest, food, excretion and exercise as the key notes of prevention and cure. When the attack is established, use forty grains of a bromide and ten of chloral every two hours. With acute mania, hyoscine is the best stand-by.

Lewis of Chicago gives many practical suggestions.

The deductions and conclusions that we may draw from this summary of the literature and from our own experience are these:

First: We have a definite clinical entity.

Second: Its etiology is in a great number of cases toxic, either bacterial or chemical, except in the lactational type which is one of general impoverishment of the body from prolonged nursing.

Third: It occurs in about 1 in 2,000 labors at present and it causes about 6 per cent of all insanity in the female.

Fourth: Its types, which I am poorly equipped to discuss technically, I will group briefly as manias and melancholias. At first thought we would expect the former to be the strictly puerperal type, and the latter the lactational and in general this classification is correct.

Fifth: Symptoms of the former have a more or less sudden onset frequently preceded by a febrile disturbance and a pulse that either fails to fall as the temperature does or even climbs higher. There may or may not have been foul lochia previously. The onset is characterized by hallucinations, sexual and religious excitement, suicidal and infanticidal promptings, the latter more common in the lactational type.

Sixth: The prognosis is fairly good and as time goes on is improving especially for the class of cases due to infections or intoxications.

Seventh: Treatment will tax all our ingenuity. General bodily health must be closely watched. The cause of infections must be met on surgical principles, as in any other infection, and the emunctories must be carefully looked after in this class, and, in those of chemical origin, its particular cause must be run down and met, whether in liver, intestine or kidney.

Rest must be obtained in the proper way. Restraint without resistance must be used, a constant attendant rather than a straight jacket. Pleasant surroundings make for mental rest as well.

Food must be nutritous and easily assimilated and its elimination must be watched, and the kidneys stimulated with all the means at our command.

Exercise to the point of stimulation, but not fatigue, is as necessary as in any disease.

Medication must be studied very thoroughly. Of the hypnotics, hyoscine is the best. The suggestion of Berry Hart as to the emmenagogues is well worth a trial.

In the lactatonial type, we have profound exhaustion to deal with, and rest, more than exercise, will be indicated, but the most important indication is immediate weaning for the mother's sake; while in the early puerperal type, weaning is indicated to remove from the mother all thoughts of the labor and also to avoid infanticide. If early improvement is not observed, a psychiatrist should be consulted and personally, I feel that a joint conduct of the case, particularly the early ones, of obstetrician and psychiatrist will give the most happy results to these unfortunates.

ENDAMEBA AS AN ETIOLOGICAL FACTOR IN NEURALGIA OF THE HEAD.*

Alexander C. Howe, M.D.

Brooklyn, N. Y.

ON September 25, 1915, I was consulted by a man, age 43 for pain in one or both cheeks, extending at times to the forehead, at other times to one or both temples. This pain had been more or less constant for five years. Had increased considerably the past year. His teeth were frequently too tender to eat substance like beefsteak. During the preceding three years he had spent about $400. among dentists with the idea that his teeth caused his pain. X-ray after X-ray was negative. His general condition and neuralgia of the face and head were such that he was frequently incapacitated for business. He also gave a history of vasomotor rhinitis and general depression that is characteristic of Endamebic protein sensitization.

Examination of nose, accessory sinuses, and throat were negative. His gums and teeth were far better than in the average mouths that give no trouble. Only a few pus pockets were found. The gum margins were not excessively irritated. None of the teeth were loose. From appearances his pyorrhea alveolaris was so slight as to be a negative factor in his case.

Microscopical examination for Endameba showed the mouth and tonsils strongly positive, but the nose negative.

He was injected with emetine September 25th at the time of his first visit. The injection was repeated the following day. On the 27th he reported that he had been entirely free from pain since the time of second injection, and that his teeth were so comfortable, he expected to tackle the first beefsteak he had attempted in two years. From that date to the present time, Nov. 1st, 1915, he has been entirely free from pain, practically free from soreness of the teeth and his symptoms of protein sensitization have cleared up.

July 29th, 1915, Miss W., age 22, came to me for relief from severe paroxysmal pain and constant ache in both upper and lower jaws which had existed for six weeks. During that time she had been under the constant care of her dentist and physician. At the time of her visit, her physician had gone away and her dentist had given her up, with the statement that her pain was not due to her teeth, as they were all right. At times the pain had been so great, hypodermics of morphine had been given to make sleep possible.

Examination of the nose and throat was negative. The teeth and gums were in unusually good condition. Three small pus pockets were found between the gums and the teeth of the upper jaw, and one in the lower jaw. She was well-nourished, had no soreness of the teeth, and showed no neurotic characteristics. Smears showed the mouth alive with Endameba, but the nose negative.

It did not seem possible that so slight a condition of the gums could cause so much nerve irritation. To clear up whatever Endamebic irritation there might be, I began emetine injections on August 1st. On the 3d she reported paroxysms less severe, and was injected again. Gradual reduction of pain was reported on the 5th when emetine was repeated. August 7th she reported no paroxysms and the constant pain was diminishing. On the 9th of August all pain and ache had disappeared. Injections were continued for a week longer, even though she had been entirely free from discomfort.

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* Read before the Flatbush Medical Society.

On October 10th she consulted me regarding another matter, and reported that she had been entirely free from all neuralgia and ache in her face and head; that her general health had been better than for years; that her weight had increased, and that her attacks of vasomotor rhinitis had stopped.

September 15, 1915, Mrs. D., age 45, was referred to me by another physician for examination to determine whether her persistent headaches which had lasted some eighteen years might not be traced to some infected accessory nasal sinus. Transillumination and ocular examination were negative. Her sinuses were very clear and practically no nasal discharge existed. The teeth and gums were in good condition. Smears showed the mouth strongly positive, but the nose negative, of Endameba.

For want of a better trail, I suggested to her physician to follow the Endamebic. The headaches which were frontal and occipital cleared up at once, but tended to return after three or four days. A second series was given, after which all pain disappeared and has remained absent to the present date. About two weeks after the second series she requested a third series of injections, fearing her headaches might return, thereby indicating her association of relief with the emetine treatment.

June 22, 1915. A woman, age 45, living just outside the city sought relief from neuralgic pain over left cheek and frontal sinus. She was in miserable general condition and showed distinct symptoms of a considerable hyperthyroidism. The pulse was 120, temperature 99° distinct tremor, very emotional, and so prostrated, the trip to my office left her exhausted. Transillumination showed the left antrum dark, all the other sinuses clear. Irrigation of the left antrum returned much foul pus. The teeth and gums were in unusually good condition. Intranasal operation under local anesthetic gave good drainage. The pain in the face and head lessened, but the general symptoms of hyperthyroidism did not diminish. Sedative and belladonna treatment was instituted without effect. Then for the first time smears from mouth and nose were made, and both proved positive. As the antrum continued to discharge and pain in side of face persisted, although very good drainage was obtained, I concluded that both were being maintained by Endameba. The change in the general and local conditions were very rapid after emetine treatment. The pain and discharge rapidly decreased and soon after disappeared. The most surprising change was in the hyperthyroid symptoms. The heart rate rapidly dropped to normal, the tremor and emotional symptoms disappeared and she rapidly recovered her strength.

October 7, 1915. Miss G. was referred to me by her dentist for emetine treatment. At that time she gave a history of bleeding gums, more or less antral pain and neuralgia, frequent attacks of vasomotor rhinitis and constant sensation of nasal stuffiness. She received one injection and left town till the 14th when she returned with the statement that her gums stopped bleeding within twenty-four hours after the first injection. She was then injected once and was unable to report for treatment until November 1st. She then stated that she had been free from bleeding of the gums till three days preceding, and that she had been entirely free from the antral neuralgia and tenderness.

So much for the clinical observations of the effect of Endameba in the mouth and nose. The above cases point to a distinct relation between the presence of Endameba and pain in the face and head, and to a sequence between the administration of emetine and the disappearance of pain.

What about the ameba themselves and their habitat? They are found in large numbers in water, particularly in the south. The other sources I am not familiar with. But these ameba are not the pathogenic type such as are found in the human species. The Endameba histolytica and its relatives are considered the pathogenic varities which are found in the intestinal tract and in the nose. Barlow has proven the parameba or craigiameba—a flagellated organism—to be the cause of mild dysentery or chronic diarrhea in tropical countries. The Endameba buccalis differs from the histolytica, and is found chiefly in the mouth of man. They have not been found in the mouths of domestic animals like cats and dogs. They seem to appear in the mouths of all human beings at times and, it is said, to disappear for weeks or months from even the most severely infected mouths only to reappear unexpectedly as numerous as before. This, however, may be due to a fault in examination. The number of the Endameba seems to be in proportion to the filth of the mouth. Yet they are found in apparently sanitary mouths.

It is stated that they are a natural habitant of the mouth and intestinal tract of the human being. The question arises, do they at times become pathogenic? Are we immune at one time and sensitized at another? Are they active under certain conditions and not toxic at another? These are questions yet to be determined.

In the study of some 300 cases where the Endameba have been found in the mouth, tonsils, nasal cavities or intestinal tract, I have come to summarize the effect of their presence as follows: Endameba may be found in the mouth and intestinal tract, and no local or systemic evidence result. I have never found them in the nasal cavity without suppuration or irritation being present. As long as there is no break in the continuity of the mucous membrane of the mouth and nose, Endameba produce no local or general symptoms. As soon as a breach is made in the very thin epithelium on the dental side of the gum, Endameba get busy, feed on the exudate and possibly the accompanying bacteria, and by their motility or pseudopodia, irritate the denuded area, producing inflammatory reaction and extension of the damaged area. It is possible that the breech in the mucous membrane may become healed in spite of their irritation or by their temporary disappearance from the mouth. But the presence of calcareous deposit or tartar around the teeth prevent a reunion of the traumatized gum to the teeth, and the Endameba return to a field suitable for them to work in. The pockets in which they live gradually increase in size; the gum recedes from the tooth; the alveola process is eroded till the tooth gradually loosens in its socket. The eroded soft tissue and bone, open direct access to the lymphatic and vascular systems. This provides direct entrance to the circulation for bacteria and Endamebic proteins. The same condition determines whether the Endameba are pathogenic in the nose or not. They maintain irritation and pus formation or discharge in the abraded areas. I believe their peculiar methods of feeding or possibly their powerful digestive ability is the direct cause of the irritation and pain that is so often coincident with their presence.

That they do not always cause pain is because the tissue lesion is not suitable for their activity or the nerve terminals are not inflamed. That they do not always produce systemic symptoms is because the individual has not become sensitized to the Endamebic proteins. I am now working on methods of testing the sensitization of individuals to Endamebic protein and expect soon to make a report.

How does emetine so quickly relieve the pain in such cases as I have reported? It is a very powerful amebacide. A solution of 1 to 200,000 is fatal to them. Much of the emetine is probably excreted by the mucous membrane, and by the salivary and mucous glands of the mouth. It is frequently impossible to find Endameba in the mouth twenty-four to forty-eight hours after an injection. The nerve terminal irritation stops at once with their destruction. Repair of the breech in the mucous membrane begins at once, as is evidenced in the rapid loss of the tenderness of the teeth, blanching of the intensely red areas of the gums and cessation of bleeding. If the repair can be completed before the Endameba reinvades the damaged areas, their return causes no symptoms, but, if the soft tissues are unprotected by the normal protective epithelial layer or is not re-attached to the teeth, the Endameba begin business at once with the resultant chain of symptoms.

The New York State Workmen's Compensation Law.*

PART OF DISCUSSION UPON THIS SUBJECT BEFORE THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Frederick W. Loughran, M.D. and Thomas Darlington, M.D.

THOMAS DARLINGTON, M.D.: There are many things in the New York State Workmen's Compensation Law—both in the law itself and in its administration—that are of interest to the physician. The law takes much from the lawyer and gives it to the doctor. Before the passage of this law, a large majority of these accident cases were treated at hospitals and clinics free of charge. Those treated in hospitals were largely charged against the City and were paid for by general taxation; now the industry pays these charges. Formerly many who went to physicians' offices were able to pay little, if anything; now the law requires the employer to pay at reasonable rates for the physicians' services.

Let me quote two sections of the law and comment a little upon them.

> "13. *Treatment and care of injured employees.* The employer shall promptly provide for the injured employee such medical, surgical or other attendance or treatment, nurse and hospital services, medicines, crutches and apparatus as may be required or be requested by the employee during sixty days after the injury. If the employer fail to provide the same, the injured employee, may do so at the expense of the employer. The employee shall not be entitled to recover any amount expended by him for such treatment or services unless he shall have requested the employer to furnish the same and the employer shall have refused or neglected to do so. All fees and other charges for such treatment and services shall be subject to regulation by the Commission, as provided in Section 24 of this Chapter, and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living.
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> "24. *Cost and fees.* If the Commission or the Court before which any proceedings for compensation or concerning an award of compensation, have been brought under this chapter, determines that such proceed-

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* Dr. Loughran's original paper is not available for publication.

ings have not been so brought upon reasonable ground, it shall assess the whole cost of the proceedings upon the party who has so brought them. Claims for legal services or treatment rendered or supplies furnished pursuant to section thirteen of this chapter, shall not be enforceable unless approved by the commission. If so approved, such claim or claims shall become a lien upon the manner fixed by the Commission."

Law must be interpreted in the light of reason. In deciding what is reasonable and proper each individual case must stand by itself upon the necessities of that particular case. The first question which naturally arises is, what may an employee request? May he request to be attended by his own physician? It is well known that confidence in one's physician is a good portion of the battle toward recovery. Is the request of an employee to have his own physician a reasonable request? The Commission thinks that usually it is.

Another problem on which the Commission has frequently to pass is the amount of physicians' bills. These bills are not collected by the Commission. If the employer or the insurance carrier protest the bill, the Commission may pass upon the amount involved and state what it thinks is a reasonable and proper charge. But the Commission cannot enforce the payment. That is for a court to do. Under sections 13 and 24 of the law, read together, medical service extended beyond sixty days may be made a lien upon the compensation awarded to the workman.

As physicians' fees differ somewhat in different communities and under different standards of living, the Commission has not accepted any general schedule of fees. Nevertheless as it is necessary to calculate premium rates and the medical services in most cases as a part of the insurance, there must be some fee schedule for insurance carriers to work from. As a kind of index it may be said that in the State Insurance Fund the amount calculated to be necessary to pay for the medical services is 28 per cent of the premium collected. In other words, it is calculated that the amount paid physicians annually by the State Insurance Fund is $400,000.

The second thing to which I would call attention is the large number of septic wounds. An observer at a public hearing of New York State Workmen's Compensation Commission, noting the victims of accidents as they appear there, would be impressed with the large number of deformities of fingers and hands due to infection of wounds. Case after case has come before the Commission where such poisoning has resulted in necrosis of bone and made necessary its removal; or tendons have been divested of their sheaths and become fastened to the tissues and will no longer function; or the muscle itself has been destroyed by an abscess; or nerves have been ruined, causing paralysis; or joints have become ankylosed and will not bend. As a result, the fingers and the hands become deformed, twisted and useless. Thousands of dollars in compensation have been lost, and many a good workmen has been needlessly incapacitated for life.

Of 15,000 cases in which awards were made by the New York State Workmen's Compensation Commission during 1914, 2,100 cases were examined by the Medical Department. Of these, a little over 17 per cent, or one in every six, were due to septic infection. Of the total number of cases the percentage of infection was probably much higher. Had it not been for such infection, the large majority of these cases would have recovered within the period prescribed by the law as the test for non-compensable minor accidents, to the manifest advantage of all concerned.

Forty years ago it was taught that infection was inevitable, and that pus in a wound was part of a normal process. At that time Sir Joseph Lister had just commenced to teach antiseptic surgery, but his precepts were not then generally accepted. How wonderfully in the last generation have his claims been substantiated and corroborated. Now we know that with proper first aid and care, such infection is unnecessary.

The records of the Carnegie Steel Company, the Youngstown Sheet and Tube Company, the Cambria Steel Company and others, prove this. Where formerly in the American Iron and Steel Industry about half of the wounds were infected, now little more than one per thousand cases of injury become infected. This shows what can be done in lessening such infection, in preventing loss of time, in saving payment of compensation, and, above all, in preventing the horrible deformities which mean so much in the life of the victims of accidents.

Having in mind the excellent results thus obtained in the iron and steel industry in the prevention of infection, we naturally inquire why so many cases of infection are revealed to the New York State Compensation Commission as occurring in industries most of which are much less hazardous. Is it the unclean conditions of the patients at the time of injury? Or is it the lack of first aid and aseptic dressing? Or is it lack of immediate care? Or is it lack of skill or carelessness, or lack of antiseptic treatment on the part of the physician? Does the wound become infected by the physicians' hands or instruments? From the dressings removed in many cases it would seem to be carelessness or lack of interest on the part of the physician, for no physician could be quite so uneducated as to apply some of the dressings we have seen.

But septicaemia seems in any case quite unnecessary and the onus lies on the manufacturer who has not provided first aid, or on the insurance carrier who does not obtain skilled physicians or in the ignorant and careless physician. It would appear that the practice of surgery is many years behind our real knowledge.

A pin prick has been known to cost a life. Even if an injury does not end fatally, it may cost the insurance carrier, under the Workmen's Compensation Law of the State of New York, for example, as much as $3,500 and the injured person may never again be able to work. It would be well if employers of labor should understand the advantage of employing competent physicians and of organizing a system of first aid, to the end that every wound should be cared for and that employees be rendered safe from such poisoning.

Extremely interesting, too, is an inquiry into the causes of sudden deaths that occur in the course of employment, other than those due to external violence. Apoplexy is still frequently mentioned as a cause, notwithstanding the fact that sudden death from apoplexy is in fact very rare. Every physician knows, or should know, that instantaneous death occurs almost entirely from arrest of cardiac action most frequently from aortic valvular disease, though sometimes from obstruction or changes in the coronary arteries, or disease of the mitral valves, or disease of the heart wall. The question arises, are sudden deaths due to over exertion, to strain of work? From evidence before the Commission it would appear that in many cases of sudden death the examination of the body has been merely superficial and cursory, oftimes consisting merely of listening to the chest with a stethoscope or feeling for the radial pulse; sometimes not even that much. External examination of the body after death does not, as a rule, give any conclusive evidence of the cause of death. Keeping in mind the failures in diagnosis as given by Dr. Richard Cabot, it would seem that we should have an autopsy in every case of sudden death. Even then we might not be able to determine accurately the cause of the heart failure. The interesting question arises, are any of these heart failures due to lack of nourishment? More particularly, may not some be due to lack of sugar in the blood stream? Fatigue is in some measure dependent upon the quality and quantity of the food eaten. An examination of many lunch buckets indicates that the selection of food in them is not always adapted to the needs of the system. Are not our heart failures in the course of long illness often due to restricted diet? Are not the heart failures that we meet with in every-day life among business men sometimes due to the same cause—going without lunch, for instance? How frequently have we met with men in advanced years doing a full day's work who diet themselves with the fancied idea that they may work out their own problem of health by such a course of living. It would seem that this question is worthy of careful research work beyond anything in that line thus far done.

Frederick W. Loughran, M.D., in closing the discussion, said:

"I think that there is very little more for me to say except to cite just one or two specific instances in regard to the charges. That certainly is not understood, though Dr. Darlington and Dr. Townsend have really shown what these charges should be. For instance, a bill was presented to me a few weeks ago in the case of a man earning $20.00 a day and the insurance carrier thought that the attending surgeon's bill of $105.00 and the attending physician's bill of $5.00 per visit was high. I explained the situation to them and showed them just what they would expect to pay in a private case and that the bill was not excessive. Then we had another case of a man earning $2.25 a day. He was burned, a burn perhaps of the second degree and in that case the attending physician sent in an enormous bill which certainly was not in keeping with the provisions of the Commission. And still another case where the injury sustained was that of a lacerated finger followed by infection. In this instance a bill for $736.00 was presented and during this time the man had as many doctors as he could find during the day. He called on one surgeon who incised his wound at $50.00 and after that the surgeon saw the man six times at his office in the course of six days, and during that time a physician rendered a bill for four calls a day in those six days and a night call as well and in commenting on the matter he said he had made many more calls that he had not put down. He made 310 calls inside of sixty days. Now is that rendered in accordance with the spirit of the law? I would be perfectly willing and delighted to present that bill for arbitration to the Kings County Medical Society. I believe it would satisfy the men. Those are some of the cases that are coming in every day.

"I do not see why anybody need worry about the fee bill because I haven't seen anyone pay the slightest attention to it. I think it is only just this: If the men are absolutely honest with themselves then they are going to render a bill that the Commission is bound to see is paid, as far as they can do it. That is all we can do. Be honest with yourself and honest with your patients, just the same as you are with your private patients. I trust the Commission will be able to pick out those cases and it will reduce those bills (they surely could not make them any higher) to what is really the proper limit; and I want to say that the State Society has really caused to be given to the medical profession about $750.00 a day. The insurance carriers had fixed a schedule and had hundreds, perhaps thousands, of physicians throughout the state sign the fee schedule allowing them $1.50 for every office call. There are, on an average, about 1,500 accident cases reported a day. There are many more that are not reported, but practically all of the doctors are paid. In practically every one of these cases the charge instead of being $1.50 was $2.00, so that I think I have made a very conservative statement in saying that the State Medical Society by influencing the insurance carriers have caused to be given to the profession the sum of $750.00 a day, or rather has placed them in a position to charge that much more per day, and I don't know how much that is when multiplied by 365 days, than they would have been able to charge if the State Society had not interfered and been backed up by the Commission and especially by Dr. Darlington, in their efforts to get justice for the doctor."

The Committee of the Medical Society of the County of Kings in charge of the Lewis Stephen Pilcher Semi-centennial Celebration announce that the week of March 27th, 1916, has been definitely selected for the observance of the exercises incident to the occasion. Special clinics will be held at several hospitals on March 27, 28, 29 and 30, with other appropriate events to be announced later, concluding with a banquet in Dr. Pilcher's honor on March 30 or 31. A more detailed program will be announced shortly.

EDITORIAL

EFFECTIVE LEGISLATIVE CONTROL.

THE Journal has repeatedly called attention to the inadequate methods now in vogue for handling the all important question of dealing with matters of legislation. Each County Society has its Legislative Committee, and there is the Committee of the State Society, which have worked along practically independent lines. Each has been composed of men who have been willing to give such time as they could spare to follow the various bills as they have been introduced, to combat them in committee and at public hearings and to deal with them before their introduction in the rare instances where it was possible. The local committees have found it well nigh impossible to excite general interest throughout the membership of the respective County Societies, although they have made laudable efforts, not infrequently at considerable personal expense. It has usually resulted in the Chairman and a few volunteers going to Albany to fight the battle unaided and it has been by no means exceptional to find that the most efficient aid has come, not from the profession which is most directly interested, but from lay sources, as in the case of the Osteopath and Christian Science Bills which passed both branches of the Legislature, but received the Governor's veto largely through the representations of a lay educator. The report and recommendations of the Legislative Committee of the Medical Society of the County of Kings just published in the Society's Annual Report proposes a new method that has many promising features. The proposition is that the State Society at its annual meeting shall appoint a Chairman for its Legislative Committee and that the members of the Committee shall be the Chairmen of all the County Societies, thus correlating the entire State Membership, and adding tremendous weight to the personnel of the Committee. The County Societies have usually chosen men of force and experience as Chairmen of their Legislative Committees and it is evident that among sixty of such men the enlarged State Committee will find a number who may be depended on to add effectiveness when it comes to a discussion of public health bills at Albany. The Committee will be able to muster a large, influential, representative deputation without the necessity of calling in volunteers. The money hitherto expended by individuals for their personal expenses incident to visits to the Capital amounted to no inconsiderable sum and a distinct saving in both time and expense is assured by the new plan. The appeal to the Legislature, backed by the entire profession, is bound to carry tremendous weight. The plan has already been favorably received by many representative men and when presented to the Society at its general meeting will have a powerful backing. It remains for the general profession to consider how imperative their individual aid is in making this or any other plan for representation before the Legislature effective. There are enough physicians in the State to make even practical Legislators sit up and take notice, but if the general profession remains apathetic, even this proposed State-wide membership will largely fail. There are proposals for radical measures certain to come up before the legislature this year that will have a profound influence upon the practice of medicine. It is incumbent upon every physician to keep himself informed upon this all important topic, to be able to discuss intelligently the harmful aspects of such proposals and to use his personal influence with his patients so as to make them his active allies. Our usual course has been to howl after the goad has struck us; a little sustained effort by way of prevention will effect more than any amount of indignant clamour.

H. G. W.

A MOMENTOUS DECISION.

ON January 10th Justice Hughes with the unanimous concurrence of the Supreme Court of the United States rendered a decision that is regarded by Government officials as a serious blow to nostrums and quack medicines. The case is that of a Chicago drug company which shipped medicine from Chicago to Omaha, Neb. An accompanying circular described it as a compound which was known to cure and had cured tuberculosis. The Federal Court confiscated the shipment on the ground of false and fraudulent statements under the Interstate Commerce Law. The defense set up that it was a question of a difference of opinion between schools and practitioners, a ground which Justice Hughes sweeps aside by saying that the law is not speculative, inasmuch as an intent to deceive is a fact fully as susceptible of proof in matters of medicine as in other facts of everyday life, and adds: "We find no ground for saying that Congress may not condemn interstate transportation of swindling preparations accompanied by false and fraudulent statements, as well as lottery tickets." The effect of such a decision is quite apparent. Nostrums and quack remedies must depend for their financial success upon fraudulent advertising and fraudulent advertising is susceptible of a very broad interpretation. It will not be necessary, we think, to fix limits within which the term fraudulent may be defined. Any statement that will lead a prospective consumer to purchase a nostrum that bases its claim for efficiency on its announced ability to relieve or cure any sort of disease, is fraudulent, unless it is susceptible of definite proof; and the producing of proof rests with the proprietor of the nostrum. A campaign of education backed by a decision such as this which definitely limits the sale of quack nostrums to the locality in which they are manufactured will in time drive most of the concerns out of business. This is especially true of those which are manufactured in one locality and have their most extensive sale in distant sections. As soon as all of the states can be brought to see the wisdom of formulating just restrictive laws covering the manufacture and sale of quack remedies, the victory for the honest manufacturer will be complete.

H. G. W.

Society Transactions

THE BROOKLYN SURGICAL SOCIETY.

Regular (open) meeting of the Society, held at the building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, February 4th, 1915.

The President, JAMES C. KENNEDY, M.D., in the Chair.

Program.

1. Carcinoma of the Rectum. Three cases . . Arthur H. Bogart, M.D.
2. Acute Hemorrhagic Pancreatitis . . H. Beeckman Delatour, M.D.
3. Address—"The Prevention and treatment of disabilities following fractures of the limbs." (With lantern-slide demonstration.)
   Astley P. C. Ashurst, M.D., of Philadelphia, Pa.

JAMES C. KENNEDY, M.D., President. ROGER DURHAM, M.D., Secretary

Minutes of regular (open) meeting of the BROOKLYN SURGICAL SOCIETY, held at the building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, February 4th, 1915.

The President, James C. Kennedy, M.D., in the Chair.

The meeting was called to order at 8:30 p. m.

The minutes of the last meeting were read and approved as read.

The scientific session was held.

Adjournment at 10:15 p. m.

The Prevention and Treatment of the Disabilities following Fractures of the Limbs.

By Astley P. C. Ashhurst, M.D., F.A.C.S., of Philadelphia.

(Abstract of a paper read by invitation at a meeting of the Brooklyn Surgical Society, Feb. 4, 1915.)

The results of treatment of fractures are less satisfactory than formerly, not only because our standards of what shall be considered good results have advanced, but also because our treatment is less efficient than in former years. This is due largely to the lack of interest in, and neglect of proper instruction of students concerning fractures during the period from 1900 to 1910, during which abdominal surgery claimed paramount attention.

It is desirable in metropolitan communities for cases of fracture to be referred to surgeons having special interest in such work; but as the country practitioner is unable to avoid having fractures under his care it is still necessary to teach all students how to diagnose and treat fractures, and not to permit them to specialize at least until the hospital years are passed. Moreover, the possibility of securing adequate results by non-operative means should be thoroughly impressed upon them.

Disability is as often due to lesions of the soft parts, as to bony deformity; numerous cases were cited to show (1) no bony deformity with great disability from lesions of the soft parts, and (2) marked bony deformity without any disability, because proper care had been taken of the soft parts. The damage to the soft parts and even to the bones, inflicted by forced passive motion was pointed out, with illustrative cases and its *uselessness* insisted upon. Massage, and sometimes baking, may relieve disability due to lesions of the soft parts, but *active use* of the limb is the most important factor.

In fractures of the *shafts* of long bones anatomical reduction of the fragments often is impossible, and usually is unnecessary. It is sufficient to secure *firm bony union,* with *no appreciable shortening,* and with *preservation of the axis of the limb.* Good functional results, however, following bad anatomical results do not absolve the surgeon from making all attempts in his power to secure as nearly accurate reductions as is possible.

In fractures *near joints* it is very important to secure accurate anatomical reduction; *nearly all fractures which require operation for the relief of disability due to malunion of the bones are fractures near joints.* When once reduction has been secured, the joint should be left at rest until union has occurred. Beware of passive motion.

If operation is required for the reduction of a fracture, this fact should be ascertained by the tenth day at the latest, and operation should be done so soon as the condition of the soft parts permits (usually between the fifth and tenth day), and before malunion occurs or bone atrophy develops.

Disability following fractures in the shafts of long bones is due to non-union of the bones or to lesions of the soft parts, and *scarcely ever to malunion of the bones.* Disability following fractures near joints usually is due to malunion of the bones, though lesions of the soft parts often coexist. *Non-union* is best treated by bone transplantation; but the surgeon should not be so injudicious as to employ operation in cases merely of *delayed union,* in which bony union will develop under non-operative treatment. *Malunion* near joints is best treated by resection and screw fixation.

Reports of Three Cases of Carcinoma of the Rectum.

Arthur H. Bogart, M.D.

CASE I: A. T., male, age 39 years, occupation painter, referred by Dr. W. C. Weeks, came under our care August 25th, 1914.

Chief Complaint: Constipation and pain in the rectum.

Family History: Negative except that his father had a cancer of the face which was apparently cured.

Personal History: The patient has had the usual diseases of childhood and an attack of jaundice about seven years ago; otherwise healthy.

The present trouble began in the early spring when the patient first began to suffer from severe constipation, sometimes going for three or four days without passage unless he took medicine. About the same time he noticed the size of the passages was becoming smaller and ribbon-like in character. About June he began to have frequent desire to defecate and when he went to stool passed a small amount of material which looked like the white of an egg. This would afford relief for about half an hour when the same desire came on again. At this time he also noticed that he was passing some blood with each defecation, and he began to suffer from pain in the back and rectum. This pain became more severe and was accompanied by increasing constipation until he came under our care. At this time he could scarcely pass anything from the bowels and was beginning to present symptoms of intestinal obstruction. Since the beginning of his illness in the spring he had lost about 14 pounds in weight.

Examination showed an annular growth in the rectum about 2 inches from the anal margin. The finger could not reach above the upper margin of the growth. There were no palpable glands.

An inguinal colostomy was done at this time, which promptly relieved the obstructive symptoms. Exploration showed no metastases in the liver or other organs and the growth seemed to be confined to the rectum, which was movable.

The patient was allowed to go home with instructions to report later for the second operation. He returned to the hospital about a week later in good condition and requested that the growth be removed.

On the 23d of September we excised the diseased portion of the rectum in the following manner:

The usual preparations having been made the patient was placed in the reverse Trendelenburg position and the anus was closed with a purse-string suture of silk. An incision was then made from the anus upward exposing the coccyx and lower portion of the sacrum and the coccyx and lower segment of the sacrum were removed. This afforded room for further work in the removal of the disease. The diseased portion of the rectum was then freed from its attachments and removed, the upper and lower ends of the gut being closed by suture after disinfection. No attempt was made to unite the two ends. In removing the growth the bowel was ruptured. This resulted in more or less soiling of the wound and subsequent infection. It was, however, not serious enough to prevent a practically normal recovery. In the removal of the growth the peritoneum was opened but slightly and the hemorrhage was not very great. The patient was discharged on October 19th in good condition and has since been heard from and is in good condition.

The microscopical report in the case was adenocarcinoma.

CASE II: G. S., female, age 55 years, occupation housewife, referred by Dr. R. W. Shearman, came under our care in June, 1913.

Chief Complaint: Pain and distress in the lower abdomen.

Family History: Negative so far as the present trouble is concerned.

Previous Personal History: The patient has had the usual diseases of childhood; otherwise, the previous history has been uneventful.

Present History: The present illness began only one week before admission when the patient first began to suffer from sharp attacks of pain in the pelvis and lower abdomen and a feeling of tightness in the same region. She also had some pain during and after micturition. At about the same time she first noticed that the abdomen was somewhat swollen.

Examination showed a rather emaciated woman without apparent cachexia. There was a moderate sized tumor in the lower left quadrant of the abdomen which was apparently movable and slightly tender on palpation. The same mass could be felt per vagina and seemed to be connected with the left tube or ovary.

Operation was done in this case on June 30th, 1913, through a median incision. The tumor mass above described proved to be a papillomatous cyst of the left ovary. This, together with the appendix, was removed. At the close of the operation an annular growth was found involving the upper part of the rectum, which at this point was freely movable. The growth, with about 3 inches of the gut, was excised and an end-to-end anastomosis done after the method described by Balfour.

The patient made a good recovery and was discharged at the end of three weeks. She remained well for about one year when she died following an operation for ileus resulting from a recurrence of the papillomatous growth. Examination of the gut at the point of operation showed no recurrence.

There was nothing in the history of this case pointing to a growth in the rectum, nor was it suspected until it was found at operation.

No microscopic report was made in this case.

CASE III: M. B., female age 38 years; from the service of Dr. J. B. Bogart at the Kings County Hospital; admitted November 6th, 1914.

Chief Complaint: Bloody and fecal discharge from the vagina with local pain and backache.

Family History: Father died of pulmonary tuberculosis at the age of 27. One brother died of the same disease at the age of 39. Otherwise, negative. The patient denies venereal infection.

Previous Personal History: Measles when a child; malaria five years ago; no other illness that she can remember.

Present History: The present trouble began about three months previous to admission when the patient began to suffer from pain in the back and sacral region with increasing constipation, loss of flesh and strength, with a discharge of mucus and blood from the rectum. At about this time she noticed a small mass just inside the vagina which gradually increased in size and finally ruptured, discharging blood, pus and fecal matter. For two weeks she had suffered from frequent and painful micturition.

Examination: Immediately within the rectum, and extending beyond the reach of the examining finger, there is a hard, nodular growth which is painful and bleeds easily. This growth extends forward, involving the posterior vaginal wall, where it has ulcerated through, causing a recto-vaginal fistula. There are some palpable glands in the left inguinal region. No mass can be felt through the abdomen.

On November 21st, 1914, an inguinal colostomy was done and the abdominal cavity explored. No metastases were found in the liver or other organs. The growth in the rectum was confined to the rectum and posterior vaginal wall.

On December 6th, by the combined perineal and sacral routes, with the patient in the lithotomy position, the anus, posterior wall of the vagina and lower portion of the rectum were freed. She was then placed in the reverse Trendelenburg position and the operation completed as described in the former case. She suffered considerable shock from the operation, but reacted promptly, and was discharged from the hospital about three weeks ago.

The pathological report in this case was adenocarcinoma.

BROOKLYN SURGICAL SOCIETY

Regular meeting of the Society held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, March 4th, 1915, at 8:30 P. M.

The President, JAMES C. KENNEDY, M.D., in the Chair.

Program.

Case Reports:

1. (*a*) Septic Arthritis of Right Shoulder Joint following Erysipelas. Patient.
   (*b*) Separation of Quadriceps Tendon from Patella of 1½ Years' Duration.
   (*c*) Gangrene of Foot and Leg following Fracture of Femur.
   (*d*) Strangulated Hernia with no Sac Contents Russell M. Rome, M.D.
   Case (*b*) discussed by Dr. R. W. Westbrook, Dr. W. H. Rankin, and Dr. Russell M. Rome.
2. Cases Illustrating the Importance of Small Renal and Ureteral Calculi. Lantern Slides. . . . . Burton Harris, M.D.
   Discussed by Dr. J. P. Murphy and Dr. Burton Harris.
3. (*a*) Cases of Hyperthyroidism. Patients.
   (*b*) Sarcoma of the Testicle. Specimen.
   (*c*) Jejunal Ulcer Following Gastroenterostomy. Patient.
   Thos. B. Spence, M.D.
   (These cases reported by Dr. H. F. Graham in the absence of Dr. Spence.)
   Cases (*a*) discussed by Dr. R. P. Sullivan and Dr. H. F. Graham.
   Case (*c*) discussed by Dr. E. H. Fiske and Dr. Mathias Figueira.
4. Paper of the Evening: "Infections of the Oral Cavity" J. R. Kevin, M.D.
   Discussed by Dr. Roger Durham and Dr. J. R. Kevin.

JAMES C. KENNEDY, M.D., President. ROGER DURHAM, M.D., Secretary.

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The meeting was called to order at 8:30 p. m.

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The scientific session was held.

The President called the attention of the Society to the death of Dr. C. E. Lack and asked as to what action the Society desired to take in the matter. Dr. J. R. Kevin moved that the Chair and Secretary be empowered to carry out the usual procedure in such matters. Motion carried.

Adjournment at 10:45 p. m.

Separation of Quadriceps Tendon from Patella of 1½ Years' Duration.

Russell M. Rome, M.D.

DR. R. W. WESTBROOK, in opening the discussion, said:

"I would like to inquire of Dr. Rome as to how much disability there was in that leg."

DR. R. M. ROME, in reply, said:

"He could not walk. He had to have a crutch or cane upon which he could support the side of the body on which that leg was. He could stand, however, but when he went to walk he would fall right down."

DR. W. H. RANKIN, in discussion, said:

"What was the position of the capsule of that joint?"

DR. R. M. ROME, in reply, said:

"It was ripped right up. The patella was perfectly free in the cavity and the capsule was pulled up. It was not seperated, but he had an elongated capsule about a half a foot long."

Cases Illustrating the Importance of Small Renal and Ureteral Calculi. Lantern Slides.

Burton Harris, M.D.

If you will be a little indulgent with me, gentlemen, I will present this material in a very informal way.

Concerning the diagnosis of ureteral stone: I think that those of us who are honest with ourselves will admit that up until the advent of the Roentgen rays the diagnosis of renal and ureteral stone was more or less a matter of guesswork. Certainly not until about 1905 did anyone here in Brooklyn at least begin to do any diagnostic work with the Roentgen rays that could be at all classified as accurate. Then came the rays and a wave of enthusiasm.

The most of us came to regard the rays, I think, as absolutely infallible in the matter of stone. We were taught that, and a plate that showed no stone was taken as evidence that the patient had no stone, and a great many of us, all of us, I am certain, have seen kidneys opened with the expectation of finding a very large calculus and nothing whatever was found. I think that is truer of shadows which show in the region of the lower ureter where we have phleboliths and calcified retroperitoneal glands and that sort of thing.

Now some of the X-ray men in New York became very brave and recently—even so recently as a week or two ago—I saw a report written by one of them wherein he said 'The plate shows no shadow; therefore, there is, we can say no stone of sufficient size to be of surgical importance." I insist that all stones are of surgical importance and later I will show you why I think so. I think that is a perfectly absurd thing to say—to write in a report. It is absolutely wrong.

Now, then, since about the same time—since about 1905-1908, we began to import and to make ourselves in this country reliable cystoscopes, and the cystoscope has done much to help us in the diagnosis of obscure cases. Some of the shadows, as you know, which we find in the region of the lower ureter (the pelvic shadow) we now know to be extra-urinary; and by passing a radiographic catheter we find them to be outside of the ureteral line. Sometimes when the ray has shown no shadow the functional tests help us—taking the separate urines, the phenolsulphonephthalein, the phloridzin and the indigo carmin tests and other things, with which you are perfectly familiar. The pyelograph has helped us when stones or shadows are present up in the region of the kidney by simply filling the renal pelvis with argyrol or collargolum or something of that sort and taking a picture.

This will sound a little egotistical to you perhaps, but my own attempts to get radiographic pictures of the renal pelvis antedated those of Braash by some years. I had the pharmacists at the German Hospital in such a state of mind that they avoided me on the street. I tried to get them to make solutions to put in the renal pelvis which would be absolutely non-irritating. The mistake that I made was this (and I have made it before, but not since); I should have first gone over the literature because a year or so before I began my work Voelcker, of Heidelberg, had put argyrol up to 50 per cent, non-irritating, in the renal pelvis and had taken beautiful pyelograps, of which I knew nothing.

Now ten years before the advent of efficient X-ray apparatus in this country Howard Kelly, of Baltimore, had used wax-tipped catheters for the diagnosis of renal and ureteral calculi. He said at that time he considered it the most direct means of making a diagnosis of renal or ureteral calculus. Kelly's method of using wax as a means of diagnosis in the urinary tract was not absolutely original with him. Possibly he did not know of it, but as far back as 1552 I find that one Philippe, a Portugese charlatan, used wax bougies for the diagnosis of ureteral stricture. Why it is that no one has ever used wax-tipped instruments in the diagnosis of vesical calculus I do not know, because certainly those old fellows must have found cases of bladder stone in which they could not pass a metallic instrument into the bladder. In 1893 Kelly applied it not to vesical calculus, but to ureteral calculus and thought very highly of it. The X-ray, which we thought superior to Kelly's method, we now find it not always accurate and we are drifting back to Kelly's method, in obscure cases at least.

The Mayos, who have everything at their command, tell us that there are 5 per cent of stones that do not show in the X-ray plate. I think that if the Mayos were to explore all cases having ureteral and renal pain they would find the percentage to be nearer 25 than 5 because lots of those cases will certainly pass stones later or retain them, and the man who sees the case first does not discover it at all.

Holland, a distinguished British roentgenologist, makes the statement that he has overlooked stone in only 2 or 3 per cent of cases and goes on to say that some of the others may have had stones. That, I think, is perfectly absurd because lots of those patients are going to have the stone arrested at the pelvic brim or the lower ureter and there they stay. It is important to find them and it is important to get them out.

The unfortunate part of Kelly's method was that everybody believed that it was impossible to introduce a wax-tipped catheter, or filliform, or anything into the canal by means of an instrument. Therefore, Kelly's method was limited to a small number of men possessing a very strong degree of manual dexterity as Kelly must to be able to do this work through a simple straight speculum.

In 1903 it was found at the German Hospital that it was perfectly possible to use this method and we have been using it ever since with the result that we find it is pretty difficult to be exact and be absolutely fair, but somewhere between 20 and 25 per cent of cases which are negative to X-ray for stone, in this 20 or 25 per cent stones are present.

Now, concerning the treatment of ureteral calculus, most of you know far more about it than I do, but I think we all agree that the treatment in the past has been either medical or surgical and that was all there was to it.

At this point in his remarks, Dr. Harris referred back to Pliney's time and the use of ashes of small shells in these conditions and also to Joann Stevens' remedy which in the year 1737 was purchased by the British Government for 5,000 pounds sterling and which was an absolutely worthless nostrum both medically and expectantly. Continuing, he said:

A lot of people pass stones if they drink Wildungen; at least they claim they pass them, but whether they do or not I do not know, but if they drank Brooklyn or Bronx water I feel the stone would be almost as likely to pass.

The surgical treatment of stone I shall not attempt to discuss. There is the alternate medical and surgical treatment and a new method which has been developed in the last few years, the transureteral method. Don't let it be understood that I am arguing for any timid procedure—nothing of the sort. If you have a stone in the ureter as big as your thumb nail you have to cut for it and get it out, but if the ray is negative for stone and the wax-tipped catheter shows a stone to be present you must dilate the ureter and get the stone out, and I think that most men do not realize that it is possible to dilate the average ureter up to 18 of the French scalp, which means that any stone of small size can be passed and by that method you get the stone out and save the patients a lot of trouble.

Dr. J. P. Murphy, in opening the discussion, said:

"I would like to ask the doctor how much, if any, obstruction to the flow of urine there was from the kidney in which that stone existed in the lower portion of the ureter."

Dr. Burton Harris, in reply, said:

"I should say that at operation the ureter was found to be about the size of one's thumb—very widely dilated. You can judge that from the picture. I should say at least the size of one's thumb above the point of obstruction."

Dr. J. P. Murphy, in discussion, said:

"Did it prevent the flow of urine from the kidney into the bladder?"

Dr. Burton Harris, in reply, said:

"No, absolutely. I do not think a stone hardly ever does. Seldom I think does that happen."

Cases of Hyperthyroidism. Patients.

Thos. B. Spence, M.D.

Mrs. E. Boyle, 50. Jan. 27, 1914. When first seen was complaining of symptoms of arthritis deformans—hands went to sleep, ache up to elbows, stiffness of the fingers, etc. Was also complaining of considerable loss of weight.

Feb. 10th Weighed 141 lbs.

Mch. 13 Weighed 135 lbs. Careful examination of chest abdomen and pelvic organs failed to disclose the cause of the loss of weight.

Mch. 19 Weight 134 lbs. Urine normal.

April 3d. Weight 133 1-2 lbs. Patient was very thin and in looking at her there seemed to be a slight enlargement of the lower neck. Pulse was counted and found to be 120. No tremor. No exophthalmos.

From April 7th until June 9th the patient was treated with Hydrobromate of Quinine, Sodium bromide, Thyreoidectin, Adrenalin, Ergotole, and complete rest in bed. At first there was some improvement and the pulse dropped to about 100 but it soon began to climb up again and on June 1st was 156. The patient was exceedingly nervous and short of breath. A slight exophthalmos had developed. Thyroid only slightly enlarged. Very hot all the time. June 9th operation by Dr. Spence. One lobe and the isthmus removed.

Following operation patient complained a great deal of the heat. Face was flushed and she was unable to sleep for several days and nights in spite of morphine, etc. On the third night following operations the pulse jumped to 170, irregular and intermittent, and the patient was desperately ill. An electric fan and icebag were used and an ampoule of strophanthin injected intravenously. Within one-half an hour the pulse dropped to 136. Very large doses of sodium bromide at last secured sleep and convalescence was steady thereafter.

When seen March 2d, 1915, patient was working hard but the pulse was normal and she had gained about 35 lbs. in weight. She feels fine except for her arthritis deformans. Now feels the cold much more than formerly.

Dr. R. P. Sullivan, in opening the discussion, said:

"I think this is one of the most interesting cases that I have seen or heard reported in a long while. One fact which is very predominant is that a small gland with an unobstructed blood supply is more apt to give acute symptoms than a gland with any localized tumor or recent inflammation. Whether the inflammatory condition be due to a general septic condition such as arthritis or tonsillitis or any focal infection, the classification of this case would come, I think, under the hyperplastic toxic type and the symptom of loss of weight is peculiar in that type. In unobstructed blood supply through an over-active thyroid, the gland does not get a chance to hypertrophy. You cannot get your hyperthrophy in the acini. Whatever this material is it is absorbed or taken out of the gland and does not disturb the metabolism to a very marked degree; that with no other symptom than rapid loss of weight and tachycardia delayed or the tremor delayed in this loss of weight the diarrhea may come first, and I would simply like to emphasize that fact with the unobstructed small gland.

"I recall a case operated two years ago where the gland was practically no larger than a bantam egg. A school teacher by occupation had lost something in the neighborhood of 34 pounds in three weeks and as a matter of fact it was difficult to find that she had any enlargement of the thyroid, but a diagnosis was made on that one point and exploratory operation was advised. We did a partial thyroidectomy and ligated the other side and the symptoms subsided. Microscopical examination in that case proved that it was a hyperplastic gland."

Dr. H. F. Graham, in closing the discussion, said:

"There is one point I would like to add to that case. You may have seen thyroid extract recommended in cases of arthritis deformans. It seems to me that this case proves pretty well that even with an excess of thyroid secretion the arthritis was getting worse all the while. She came for treatment for the arthritis."

Jejunal Ulcer Following Gastroenterostomy. Patient.

Thos. B. Spence, M.D.

Dr. E. H. Fiske, in opening the discussion, said:

"I would like to be permitted to say a few words about that case of jejunal ulcer.

"This is a very interesting case. I think the case, to my mind, proves the contention that many of these ulcers are not the result of the foreign body or the stitch or whatever it may be that remains at the site of the operation, but are the result of indiscretions in diet upon an area the resistance of which against the hydrochloric acid is diminished, and I think, as Dr. Graham has said, that it wasn't the position of his gastroenterostomy opening that caused the ulcer, but the fact that this man devoted himself entirely to meat, for instance, which we know does increase the hydrochloric acid, and in this connection it might be interesting to me to speak of a case which was diagnosed by myself and two or three others as a jejunal ulcer following a gastroenterostomy that I saw two months ago, occurring apparently two years after a gastroenterostomy. This man followed his diet religiously and was perfectly well until the recurrence of his ulcer symptoms and when he was seen the symptoms were typical of jejunal ulcer at the site of the anastomosis. He had hyperacidity and had tenderness over the site of the gastroenterostomy opening and at one time, just as in the case reported by Dr. Graham, masses were felt. I never felt any, but they were palpated by very good men over the region of the gastroenterostomy opening. That man was put on a rigid diet and given immense quantities of alkali, two drams of bicarbonate of soda every night before going to bed, one-half ounce on awakening in the morning and dram doses of bicarbonate before each meal during the day. For six months he had been suffering with symptoms of gastro-jejunal ulcer and we thought he would have to be operated on, but the X-ray picture showed that the stomach was emptying rapidly and for that reason he wasn't operated on, and to-day he seems absolutely cured from his ulcer.

"I think many of these cases of jejunal ulcer are caused by hyperacidity and can be cured (if they are not too chronic and not too calloused) by persistence in diet and immense doses of alkalies.

"I think the impressive feature in this case is that we must continue the use of alkalies after gastroenterostomy and that they should be given in big doses and on the slightest sign of any gastric distress following such an operation. If there have been lapses in diet and we have not persisted with treatment we must go back to that treatment and if they are early ulcers they will probably be cured by this treatment, but if there is actual obstruction then they, of course, need operation."

Dr. Mathias Figueira, in closing the discussion, said:

"I believe in this class of cases that the use of alkalies is important and that what the patient eats for a long time after operation is even more important.

"I have a case under my care which I operated for gastric ulcer two years ago and that patient went along very well and when he thought that he was entirely well he began to eat corned beef and cabbage, pork and beans and all that sort of thing and he also began to drink. The result was that the symptoms came back in the same way—pain an hour after eating, regurgitation of gases and vomiting and constipation. He was advised to diet and was put on a rigid diet and given alkalies and within four weeks he is entirely well and has resumed work and I think that if he continues along that line he will get well, showing that a good many of these cases have a return of their condition from hyperacidity brought on by errors in diet."

Paper of the Evening: "Infections of the Oral Cavity."

J. R. Kevin, M.D.

Dr. Roger Durham, in opening the discussion, said:

"This subject is of rather personal interest to me because of a recent experience. The patient whom I have in mind shortly after Thanksgiving time, had an acute follicular tonsillitis and following the tonsillitis there was an elevation of temperature of from one-half to one degree, which persisted until after Christmas time, when there followed some enlargement of the cervical glands on either side of the neck, continued malaise, and general bad feeling with chilly sensations, especially in the afternoon; and then involvement of various joints, fingers, wrists, knees and ankles, not very serious, but just painful for a few days with a little swelling; and this continued for another month. The joint symptoms began to subside, but the temperature persisted and is still persisting,—an elevation of about one-half to one degree every afternoon—and decided fullness over the cervical glands. She had been under competent medical attention; and after a rest in the country of about a month, which did not help the local condition any, but which aided the general physical condition, I suspected that the tonsils were the probable source of the trouble, but while they had been in the beginning, the laryngologists feel that the tonsils are absolutely beyond reproach at present, also the nasal cavity, and they suggested that x-ray pictures be taken of the teeth. They were taken by Dr. Eastmond. One tooth, that was crowned ten or fifteen years ago, shows that the crown and the filling have been put in over the surface of the tooth, and the filling had not been placed down into the apex of the tooth, so that there is a cavity below, which, while it has given no toothache, may be one source of infection. Another tooth has been filled pretty well down in the jaw, and there are two other teeth which show an alveolar condition with a few granulations around the gum, which may account for the trouble. Dr. Van Wart, who saw the patient, thinks this may be the source of her present temperature, which was probably in the beginning started by the tonsillitis and the joint infection, but which having once come into being, has been continued by the mouth condition. Nothing has as yet been done with the teeth, but the case is interesting when taken in conjunction with the points which Dr. Shea brought up in his discussion."

Dr. J. R. Kevin, in closing the discussion, said:

"I have nothing further to add except to suggest to Dr. Durham that if his case had autogenous vaccines they might help to clear it up, and I think that it would be a good case in which to get some of that and try the autogenous vaccine."

By Dr. Durham: "We have used the mixed vaccine, but it seems to have had no benefit.

"I might say in reference to the vaccines that I was interested in an article by Dr. Billings wherein he says that the vaccines, stock vaccines, are not only like the gunshot prescriptions of the old days (in the old days, however, gunshot prescriptions used to be discharged from the intestinal tract and did practically no harm to the patient), but he states, after some experience, that the gunshot prescriptions of the stock vaccines, mixed and otherwise, not only do harm, but often do a great deal of harm and that patients very often suffer from the new toxine that hadn't existed prior.

"I wish to say that I am very grateful personally to Dr. Shea for coming here because I have learned a great deal of the teeth that I did not know before, and I am sure all of us have appreciated his talk on his practical knowledge of the subject."

Dr. Raymond P. Sullivan:

This group of goiter cases is one of the most interesting I have seen or heard reported. The last case demonstrates a type of gland which might go unnoticed. It proves that the severity of the symptoms of hyperthyroidism is not always in proportion to the size of the gland and that also enlargement is not one of the first symptoms. Cases with a small hyperplastic gland and unblocked blood and lymph circulation are frequently more dangerous than those with the larger glands. This case presented for Dr. Spence was a hyperplastic toxic goiter. Prominent in this type is rapid loss of weight and early gastrointestinal disturbances. I have seen this occur even before tachycardia or tremors or exopthalmus. The reason being that there is intense intoxication and hence early disturbance of metabolism.

Another interesting point brought out in this case was the previous history of infection. There was an arthritis. This condition well might be considered an etiological factor of the hyperthyroidism.

I would like to emphasize the point that hyperthyroidism due to a small gland with an unobstructed blood and lymph circulation frequently begins with rapid loss of weight or diarrhea. That enlargement of the gland or tachycardia may be delayed for some time, but which I firmly believe will follow. To illustrate:—I recall a case operated upon by me at St. Mary's Hospital two years ago. The gland was found to be a little larger than normal in size. A school teacher had lost something in the neighborhood of 24 pounds in three months. During the latter part of that time she had suffered greatly with diarrhea. She became nervous and repeated treatment in the hands of a competent family physician failed. There was practically no tachycardia up to the time of operation. We did a left lobectomy and ligated right superior vessels. The result was most pleasing. She is to-day enjoying excellent health and has undertaken increased responsibilities. The microscopical examination showed a hyperplastic gland.

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting, October 7, 1915.

The President, DR. ROGER DURHAM, in the Chair.

Fracture of Lumbar Vertebra. Patient.

Henry F. Graham, M.D.

Patient Ray J. Operation July 21st.

While seated high up in a swinging chair, the rope broke and the patient fell four stories, landing on his feet. He was brought to the Norwegian Hospital in the ambulance. There was no paralysis, but examination of the back showed marked depression over the spine of the second or third lumbar vertebra. After attempts at traction, counter pressure, etc., this still remained. An abdominal operation was done in the hope of reducing the dislocation by direct pressure. It was found that when strong traction was made on the lower extremities the abnormal anterior prominence disappeared. In other words, he had a crushing of the body of the second lumbar vertebra which allowed lateral displacement of the spine. Heavy weights were put on both legs and thighs and traction kept up for some weeks. He now wears a brace to support his chest, etc.

Retro-Peritoneal Fibroma. Resection of Gut. Specimen. Patient.

Henry F. Graham, M.D.

B. R., age 25, May 22nd, 1915; Methodist-Episcopal Hospital No. 16261.

Family History: One sister is at present suffering from a malignant adenoma of the rectum.

Past History: Six years ago the patient was incapacitated for over a year by pulmonary tuberculosis. Has been seemingly in good health for several years.

Present Illness: For one month the patient has felt something wrong in the right lower abdomen. No pain; no marked indigestion; just noticed a lump a day or so ago.

Examination: There is a mass the size of a large grape fruit, in the right iliac fossa. It is somewhat movable sideways, but seems fixed posteriorly. The intestines seem to overlie the growth.

Diagnosis of enlarged and tuberculous retro-peritoneal lymph nodes made.

Operation at the Methodist-Episcopal Hospital: Long right rectus incision. An endeavor was made to incise the peritoneum and peel back the blood-supply of the intestines, but it was impossible to do this without injury, so a resection became necessary. The terminal ileum, cecum and ascending colon were removed and a side-to-side anastomosis made. The growth shelled out easily.

The after-course was never critical, but the patient suffered intensely with pain for nearly ten days. The growth was supposed to be sarcoma, so Coley's fluid was given in ascending doses.

Miscroscopic Report: Diagnosis, fibroma. There are areas where the fibrous tissue cells appear embryonic in character. Approximates in appearance fibrosarcoma, but the examiner believes it to be benign. (Dexter.)

September 29th, 1915: The patient has gained 14 pounds since leaving the hospital.

Tuberculous Peritonitis. Patient.

Henry F. Graham, M.D.

Patient B. S., female, age 20, April 9th, 1915; Methodist-Episcopal Hospital No. 15364.

Family History: One maternal uncle died of tuberculosis.

Past History: There has been a 7-10 pounds loss in weight in the past few months.

Present Illness: Several months ago she had a pain on the left side of the abdomen, in the iliac region. Now for nearly three weeks she has had a sharp pain in the right iliac fossa. At times it doubles the patient up. She cannot lie on the side. No leucorrhea. The periods were regular until this month when her period came on three or four days early. No spotting between periods. She had some back ache low down. No lengthening or increase of periods. No vomiting. Bowels regular. No urinary symptoms.

Examination: Cervix small, slightly eroded; uterus retroverted; adnexa normal. Appendix tender and some rigidity in the right iliac fossa. Temperature 101; plus 108. A diagnosis of appendicitis was made.

Operation at the Methodist-Episcopal Hospital showed the entire peritoneal cavity studded with good sized tubercles. The appendix was removed. Closed by layer suture. No drainage.

After-care consisted of living and sleeping out of doors all the time on the porch, forced feeding, hydrochloric acid milk (½-drachm to the glass of ice cold milk) and increasing tuberculin injections.

September 27th, 1915: Weight 105¾ pounds for the last two months. Abdomen soft. No fluid. Bowels move well daily.

Torsion of the Mesentery of the Small Intestines. History.

Henry F. Graham, M.D.

K. L., aged 37, Norwegian Hospital, No. 2567, ironworker.

Father died of obstruction of the bowels.

The present illness began while the patient was working, four and a half hours before admission. There was a sudden onset with very severe abdominal pain around the umbilicus. He had met with no accident. He vomited five times. He had a desire to empty the bowels, but was unable to do so.

The history is rather incomplete because the patient did not speak English.

Examination revealed a robust, muscular man who was suffering excruciating pain. The abdomen was distended somewhat and was moderately rigid. No masses could be made out. Operation was immediately performed. Left rectus incision with center at the navel. As soon as the peritoneum was incised a distended black coil of gut was extruded from the abdomen. There was some free fluid. Coil after coil of gangrenous intestines was pulled out until it seemed as though all of the small gut was involved. One perforation was found. At length, however, healthy tissues were found and then an inspection showed a half turn of the mesentery of the small intestines clockwise. A resection of about eight feet of gangrenous gut and the involved mesentery was accomplished. This was difficult because clamps cut through and the sutures would not hold. Murphy button anastomosis. There was marked shock. The patient vomited for two days post-operative. He then began to have a diarrhea. On the fourth day he had four bowel movements. At this time he looked and felt fine. On the fifth day he had five movements, the sixth day five, the seventh day eight and looked badly. He began to have pain and vomiting. On the eighth day he had five movements. He died.

Autopsy showed a secondary perforation at the suture line around the button opening and a peritonitis. Probably the thrombosis of the vessels had extended.

Stone in the Ureter. Specimen. History. X-Ray.

Henry F. Graham, M.D.

Bertina L., 258-60th street, age 26; patient of Dr. Fedde. Norwegian Hospital, June 21st, 1915.

Family History: Negative.

Previous History: Several pregnancies. One living child. The patient has been under treatment seven months by Dr. Fedde for pyelitis and complications. December 3rd, 1913: Pain in the right side of the back and tenderness in the right costo-vertebral angle. The patient is pregnant. December 8th, 1913: Severe pain. Urine cloudy and loaded with pus. December 15th, 1913: Stiffness and pain in legs. December 23rd, 1913: Severe pain in the side. January 19th, 1914: Pain in the back. Knees stiff and painful. Urine full. February 9th, 1914: Severe pain in the back. February 10th, 1914: Nausea and vomiting. Abdomen distended above pregnant uterus. February 13th, 1914: Normal labor. April 21st, 1914: Crampy pains and stiffness in the back. Urine cloudy. Bacteria and pus cells. May 14th, 1914: Occasional pain in the back. Urine the same. July 27th, 1914: Back well, but urine still shows pus. August 10th, 1914: Same. Urine shows fewer pus cells and blood than before. August 31st, 1914: Pain and aching on the other side of the back (left). The patient passed a stone about September 20th. June 1st, 1915: In the interval she has had peripheral neuritis. She was in the Kings County Hospital for three months. The urine during this time was clear. She has now been ill since May 27th, 1915, with chills, fever and sweating and frequent urination. Some ardor urinae, anorexia and diarrhea, black stools, pain in all the large joints, slight tenderness in the left lumbar region; slight fullness in the left flank with tenderness. Urine the same. June 3rd, 1915: Chills, fever and sweats. June 8th, 1915: Patient feels better. Cystoscopy by Dr. Fedde. Right kidney; urine clear, blood cells. Left kidney cloudy and scanty. Slow in coming. Bladder urine cloudy. June 18th, 1915: Dr. Fedde obtained three fine scratch marks on a wax-tipped bougie in the left ureter. Obstruction 15. cm. up. Patient admitted to the Norwegian Hospital. June 26th, 1915: Dr. Lange did a functional test on both kidneys. Both nearly normal. Obstruction met as before. Examination of the patient, who was a thin, emaciated woman, weighing only about 100 pounds, showed a tender point in the abdomen on the left side of the spine, one-third of the way from the naval to the left anterior spine of the ilium. Deep palpation in this region gave a small mass about the size and shape of a little finger. This was also felt by the House Surgeon, Dr. Garben. There was some tenderness in the left costo-vertebral angle and also in the left vaginal fornix. The x-ray plate showed an elongated shadow at the level of the upper end of the sacro-iliac synchondrosis.

Operation by Dr. Graham, June 28th, 1915: Left intermuscular incision at the level of the spine. The incision was extra-peritoneal. The peritoneum was strippel up and the ureter easily exposed. The stone was found at the point where it had been previously palpated. The lower end rested just above the vessels. The ureter was steadied with small tenacula, incised and the stone removed. A uterine sound was passed up to the kidney and down to the bladder. The incision in the ureter was sutured with fine plain gut sutures and a rubber tissue drain tied with catgut to the suture line by one tie of a surgeon's knot. It was a very easy operation. The post-operative course was uneventful.

Retro-Peritoneal Fibroma. Resection of Gut. Specimen. Patient.

Henry F. Graham, M.D.

Dr. Henry F. Graham, in closing the discussion, said:

"I think the most interesting point which I didn't dare emphasize is the fact that the sister is dying of inoperable adenoma of the rectum—

malignant adenoma." There seems to be a family predisposition to new growths.

Tuberculous Peritonitis.

Henry F. Graham, M.D.

Dr. James C. Kennedy, in opening the discussion, said:

"I would like to ask the Doctor whether he regards his case of tuberculous peritonitis as a primary affection. The question as to whether primary tuberculous peritonitis ever exists has been in dispute for a long time.

"About three years ago I saw a young unmarried lady, with a negative family history, who stated that for six months past she had suffered from abdominal pains. Occasional attacks of vomiting and diarrhea, alternating with constipation, accompanied these pains. The patient's appetite was poor, she slept little, and had lost considerable weight.

"On examination her abdomen was found enlarged and showed the presence of fluid. Just below, and a little to the left of, the umbilicus, was found a large tumor-like mass which was painful to the touch. The presence of a hymen prevented a vaginal examination, while a rectal examination showed nothing. At the hospital a von Pirquet tuberculin test was positive. Tuberculous peritonitis was thought of, but we were unable to account for the tumor. The X-ray did not help us.

"Under novacain anesthesia, an exploratory incision was made. On entering the peritoneal cavity, a large quantity of straw colored fluid made its escape. The presenting intestines and the under surface of the parietal peritoneum were studded with miliary tubercules; the omentum was rolled up into a mass which we felt through the abdominal wall, while its folds were held together by frail adhesions, easily broken up. The peritoneal cavity was emptied of all its fluid and then filled with warm saline solution, and closed without drainage. At the end of two weeks the patient left the hospital.

"I saw this patient a short time ago; she has had no return of her trouble, has gained weight, and feels remarkably well. In the absence of other visible foci, I regard such a case as a primary affection."

Dr. Norman P. Geis, in discussion, said:

"In reference to supposed primary tuberculosis: I operated on a virgin about twelve years ago for tuberculous peritonitis and found the tubes and uterus studded. One tube was removed. She apparently got well and about six years afterwards came back and I removed the other. She never showed any signs of infection in the lungs or anywhere else. She is now well and we put that down as a case of primary tuberculosis."

Dr. Henry F. Graham, in closing the discussion, said:

"I do not feel capable of answering Dr. Kennedy's question. I do not see how you can tell in an individual case whether it is primary or not, unless the patient dies and you have an autopsy. I did not find any signs in the lungs or anywhere else, but it would be hard to say that there weren't any."

Pulmonary Abscess. Three Cases.

Dr. Earl H. Mayne.

Case 1. *Pulmonary Abscess.* (*Chronic.*)

James S. (male), banker; 53 years old; Spanish.

Family History: Father died at age of 82; mother died at age of 72. No history of tuberculosis in either branch. Patient had typhoid at age of 12. Gave history of cough and free expectoration as long as he could remember; this, I think, is significant in view of his subsequent history. Although the cough and expectoration were annoying, they appeared to have little or no effect on his general health. He was never sick in bed a day (save during the attack of typhoid) until March 17, 1901, when I first saw him. He then had a clull and developed a lobar pneumonia involving the *upper lobe of the right lung*. The onset and progress was unusually severe marked toxemia and delirium showing on the third day of the disease. The detailed history of this attack of pneumonia is most interesting, but time permits me to give only a brief resume. After the third day the patient was, for thirteen weeks, totally unconscious of his surroundings. The disease gradually spread until all three lobes of the right lung and both lobes of the left lung had been involved, the lobes earliest involved clearing up before others became diseased. The nervous system was especially affected by the toxins, so much so that a meningeal inflammation was suspected. A lumbar puncture and examination of the fluid negatived that about the fifth week of his pneumonia. A marked oedema of the uvula and soft palate occurred which necessitated immediate amputation of the uvula. The kidneys remained practically normal throughout the attack.

At the end of thirteen and one-half weeks the patient gave signs of returning consciousness, the lungs became clear and convalescence was established. Five weeks later the patient was able to go to the country where he rapidly regained his strength, both physical and mental.

Following this unusually severe attack of pneumonia there appeared to be left over a bronchiectasis affecting the entire right lung, more pronounced in the upper lobe. This condition seemed to have no special effect on the patient's health. A chronic cough with very free expectoration (1 to 3 ounces daily) continued until the latter part of January, 1915. During all this period the patient attended to his business.

In the latter part of January, 1915, he contracted influenza and was obliged to remain away from business for a few days, although not sick enough to consult a physician. From then on, however, he frequently complained of chilly feelings in the afternoon, and of being very tired at night.

On February 24, 1915, I first saw the patient in his present sickness. He had a fever of 102°F., profuse sweating and chilly feelings, and was expectorating a dark, putrid, gangrenous material which had the odor of gangrene. The fever abated in a few days, the odor disappeared and the patient insisted upon returning to business. On March 16th, he was again attacked with fever and had a recurrence of the chills, sweats, and dark, putrid, malodorous expectoration. This attack was of greater length and severity, clearing up in about two weeks. The patient was sent to the country for a few weeks where he appeared to entirely recover his strength. I asked to have a radiograph taken at this time, but this was refused. The patient returned to business for a few days only when a third severe attack occurred. The physical signs showed the entire upper lobe of the right lung to be consolidated. Temperature ranged from 102 to 105; there were frequent chills; expectoration most offensive, varying from 8 to 16 ounces a day; profuse sweating. This attack lasted nearly four weeks. From this time on very profuse night sweats occurred, although a period of more than six weeks followed with no fever and no odor to the expectoration; splendid appetite. A sea voyage was then taken to South America. A week out from New York another attack set in; this lasted for several weeks, to be again followed by a period of no fever, no odor to the expectoration, a good appetite, etc.

The patient has maintained nearly his normal weight. He experiences much weakness of the lower limbs. On September 9th, radiographs were taken which I submit for your inspection. I give you herewith the skiagraphic report:
"X-Ray Findings:

The chest wall, diaphragm, heart and aorta present practically no abnormalities, except that the aortic area is slightly broader than usually seen.

The left lung presents no marked abnormalities.

The lower half of the right lung is clear. In the upper portion of the right side of the chest, extending from the second to the fourth ribs, anteriorly and from the third to the sixth ribs posteriorly, there is a fairly well circumscribed dense area about three inches in diameter.

The lower margin of this area is sharply defined, the upper margin less so.

This area of density is seen to extend outward toward the median line, to the hilum of the lung.

Diagnosis:

A study of the X-Ray plates of Mr. S. justifies the diagnosis of an abscess of the upper lobe of the right lung, with an extension to the bronchi at the hilum."

Repeated examinations of the sputum show no tubercle bacilli, but constantly broken down tissue, streptococci, staphylococci and diplococci.

The last report on the examination of the sputum I give herewith:

"The specimen is pure pus mixed with broken down tissue, but the tissue is too much broken down for its character to be determined. The micro-organisms present are:

1. Two morphologically different streptococci.
2. A staphylococcus.
3. A diplo-coccus.
4. A bacillus which is morphologically similar to the bacillus pyocyaneous and from the green color of the pus upon incurbation is probably that micro-organism."

Blood shows a negative Wassermann. Hemoglobin varying from 70% to 85%. Red cells about 4½ million. A persistent leucocytosis, much higher during the attacks of fever, 18 to 25 thousand, with a differential count varying from 65% to 85%.

The physical signs are *almost entirely* absent during the periods of quiescence. Three of the cleverest internests of the city have examined the patient and declared that, did not the radiograph show it, an abscess would not be suspected, except from the history of the case.

The fingers are very much clubbed in this case. Patient reported spitting up blood on three different occasions; a slight quantity on two occasions, and a good deal on the third. He ascribed the blood to a nosebleed; from his description, however, I judge each occasion to have been a true hemoptysis.

CASE. 2. *Pulmonary Abscess (Acute).*

A. H. (male), sea captain, 40 years of age. Holland. Family history negative. Previous history shows no illness except syphilis at age of 20. Had one year's treatment after which he was apparently well. The present illness followed injuries received in an automobile smashup on the Island of Martinique the first of October, 1912. The patient was removed to the hospital in an unconscious state. He did not regain consciousness for three days. A severe cough and high fever developed soon after reaching the hospital and continued during his stay there (three weeks). He then left the hospital, and came to his home in Bay Ridge on November first. His condition on arrival was very grave; temperature varying from 103 to 105; had severe night sweats, profuse, dark, fetid expectoration; blood count 1,300,000 differential 92%. Sputum contained streptococci, staphylococci and pneumococci. A plumonary abscess was suspected. Treatment: An autogenous vaccine was made and administered at from four to seven day intervals for about two months. Inhalations of medicated, heated oxygen were given several times a day. On November 7th, very definite signs of an abscess were made out in the lower lobe of the right lung posteriorly. A few days later a circumscribed pleurisy developed over the suspected area, and preparations for operative measures were made.

Directly following these preparations the abscess broke into a good-sized bronchus and the patient expectorated fully twenty-four ounces of dark, fetid, most offensive pus. During the following five weeks the quantity of expectoration varied from 16 to 20 ounces a day. It then began to diminish. During this period the temperature was high (103 to 105). Repeated sputum examinations showed the same organisms as at first, but in addition, broken down lung tissue. Blood showed a three plus Wassermann and good resistance. The urine remained free from casts and albumen throughout the disease. After December 15th, all the symptoms gradually diminished and the patient made a good recovery. In March, 1913, he was able to take charge of his ship. He has since enjoyed perfect health.

CASE 3. *Pulmonary Abscess (Acute).*

P. J. (male), 56. Ireland. Clerk. Family history negative. Previous history: The patient had always been well except for some minor ailments. He was, however, a periodic drinker. On June 6, 1906, after one of his sprees, he was taken with a chill and high fever; two days later he began to expectorate a dark-colored, thick, fetid material. The quantity of expectoration rapidly increased until he was spitting up from 8 to 12 ounces daily. The high fever, accompanied by chilly feelings, continued.

About ten days after the onset a circumscribed area of dullness, together with the physical signs of a cavity, could be mapped out over the lower right lobe posteriorly. In spite of medical treatment the patient's condition failed to improve, a marked toxemia developed; and just four weeks after the initial chill the patient died.

In connection with the study of Case 1, I have looked up the literature of abscess of the lung rather carefully, and have been delighted to find a wealth of information on the subject in the Transactions of the *American Surgical Association* for 1904, Vol. 22.

It occurred to me that a very brief review of the subject might be of interest to the members of this Society.

On the subject of lung abscess and bronchiectasis the most notable contribution is by Charles Henchen, M.D., of the Zurich or Sauerbruch Clinic. His paper deals particularly with the surgical treatment of bronchiectases, and is a masterpiece. The disease is most frequently found in the lower lobes and particularly in the *left* lower lobe. Of 121 cases observed by Criegren, Tuffier and the Zurich Clinic, 108 were in the lower lobes. In this disease the skiagram often misleads the best-trained eyes and is less dependable here than in any other intrathoraccic condition. Henchen says that the operative procedure which has been clinically tested at the present time, and of which a definite valuation is possible, is divided into two large groups: (a) Indirect, extra-pulmonary operations which aim to secure obliteration and diminution of systems of bronchiectatic cavities, through relaxation, compression, or artificial production of shrinking by growth of connective tissues. (b) Direct intra-pulmonary operations comprising methods of drainage, resection and amputation.

The results obtained by the first procedure are of little value or permanency except in the early cases, or in those cases where the affection is limited to the cortical areas.

The second procedure is unquestionably regarded as the most natural method of treatment of the late cases, where there are circumscribed, isolated cavities or of cavities consisting of many and large divisions. The best results have been obtained in the single ectatic cavities of the upper lobe. The operation is done preferable in two stages, except where firm pleural adhesions exist. Local anaesthesia gives the lowest mortality. From the honeycombed character of these cavities lancing and drainage alone can give only improvement in the great majority of cases.

The mortality in very high, varying from 35 to 73% by different operators. Sauerbruch's statistics based on 123 cases of bronchial ectases treated by pneumotomy gives a mortality of 35%, with 33% cured, the remainder were not cured and only a little improved. Lilienthal reports five cases of bronchiectases operated upon with one death and four improved. Willy Meyer reports 16 cases of bronchiectases operated upon with eight cured or improved, and eight deaths.

Abscess of the lung accompanying or resulting from bronchiectases should be classed as chronic. In all abscesses of the lungs not due to bronchiectases surgical treatment is very encouraging. Scudder reports 27 cases operated upon at the Mass. General Hospital with 18 recoveries and 9 deaths.

Case 4. *Congenital Misplacement, of the right kidney, the seat of a tubercular infection.*

Katherine C., 15 years old, U. S. Father and mother living and well. An uncle on the father's side suffered from tubercular peritonitis.

Patient was always well until December 7th, 1914, when she complained of pains over the lower abdomen accompanied by fever, nausea and vomiting. I saw her on December 13, 1914, at 9 p.m. The blood picture at that time was typical of pus, and the urine contained a large quantity of albumen, all varieties of casts and many red blood cells.

The patient was sent to the Coney Island Hospital the following day and the abdomen opened. A large walled-off cavity of pus was found below the umbilicus and drained. It was thought to originate from the appendix. Recovery was very slow, the kidney condition causing a great deal of alarm. Patient left the hospital at the end of three months with a persisting sinus from which quantities of pus flowed. A secondary operation was contemplated but the patient's kidneys were in such bad shape that it was decided to get her built up before doing it. On June 17, 1915, she was subjected to the secondary operation. The sinus was followed to a mass lying on the right side of the spine close to the lowest lumbar vertebra. This mass appeared to be the right kidney; it was dissected loose, its pedicle carefully ligated, and the mass removed. The pathologist's report is as follows:

"I have gone over numerous sections of the C. case (suspected kidney) and I believe it to be a kidney, the morphology of which is completely destroyed by an inflammatory process which probably is tubercular. In some areas there are groups of cells that have the appearance of the renal tubules, but I have failed to discover a distinct tubular or glomerular arrangement of the cells. There are present low grade connective tissue cells, many round cells and well defined blood vessels, and cells that have the appearance of the endotheleal cells of granulation tissue. The cells for the greater part are in various stages of degeneration, apparently an inflammatory process with necrosis."

This operation was followed by a rapid recovery. The patient has gained many pounds and lost her anemic appearance; the urine contains only an occasional cast and no albumen; the wound is entirely healed.

Case 5. *Tubercular Cervical Adenitis.*

R. McC. (male), 14 years old, U. S., School-boy.

Father and mother alive and well. Patient's only sicknesses previous to present illness were recurrent attacks of tonsilitis. Operation for removal of tonsils had been advised but refused. In April, 1914, the mother noticed swollen glands on the right side of the neck, the swollen condition gradually increasing, with inflammation, a few weeks later an incision was made and pus evacuated.

I saw the patient in January, 1915. At this time there was a discharging sinus leading to broken down glands. Several enlarged glands, varying from the size of a hazelnut to that of an English walnut, were also present. The tonsils were both very large and diseased, especially the right one. Removal of the tonsils was advised together with a curetting of the sinus, to be followed by tuberculin. The tonsils were enucleated a few days later and the sinus curetted. The tonsils were examined by a pathologist who reported them to be tuberculous.

A week later tuberculin treatment was started and was continued for six months. The sinus persisted for two months after curetment. The enlarged glands gradually diminished, and the general health of the patient greatly improved. The glands are hardly palpable at present.

Cases 6. (A) *Lane's Kink with recurrent appendicitis.*

F. M. D. (male), 39 years old. U. S., Auditor.

Family history negative.

Previous history shows that the patient enjoyed good health up to 1908, when he began to have sensations of fulness and discomfort in the lower abdomen, especially on the lower right side. He had a great deal of flatus, occasional belching of gas, and sour stomach. These symptoms were not constant but present a good deal, becoming greatly aggravated at times. At these times constipation was quite marked, the appetite was poor, or at least, the patient was afraid to eat because of the added distress food produced.

This patient was treated by two stomach specialists for intestinal indigestion, for a period of three years. In July, 1914, all of his symptoms became greatly aggravated, and early in August of that year he came under my care. Examination showed tenderness over the right iliac region, distention by gas of the cecum. Operation was advised and accepted. On August 17, 1914, the abdomen was opened, the appendix was found kinked at right angles at its midway point, the distal part being atrophied and the proximal part hypertrophied and moderatedly inflamed. The terminal six inches of the ilium was closely bound down by non-imflammatory peritoneal bands. The appendix was removed and the bound-down ilium liberated. Since the operation all the distressing symptoms have disappeared and the bowels have become regular, with a gain in weight of 20 pounds.

(B) *Lane's Kink with recurring appendicitis.*

C. L. H. (male), 46 years old. U. S. Accountant. Family History: Father died "of pleurisy" at 46; mother died "of chronic bronchitis" at 42. Previous History: Shows the patient to have enjoyed moderately good health until the age of 26, when he began to have attacks of "nervous indigestion." At first these attacks came about every six months and would last from two to ten days. They gradually increased in frequency until they averaged one in three months. They would begin with distress over the pit of the stomach, then nausea, and finally retching. These symptoms would gradually subside leaving a general soreness. The patient never noticed any localization of pain over the right iliac region. A marked constipation was always present. In 1910, a very severe attack occurred. On January 21, 1915, a second very severe attack occurred. It was during this attack that I was consulted. The symptoms of nausea and retching had lasted twelve hours when I first saw the patient. Slight fever was present and a pulse of 100. Twelve hours later the temperature had risen to 103 and the pulse to 120. The blood showed a leocopenia; the whites were 6,000, the polymorphonuclears were 73%. In spite of the blood picture it was thought best to operate and twenty-five hours after the onset of the attack, the abdomen was opened. The appendix was found to be acutely inflamed and contained a few drops of pus. The terminal portion of the ilium firmly bound down by non-inflammatory peritoneal bands, and was constricted. These were dissected loose and the ilium liberated. The appendix was removed.

Five weeks later an examination of the blood showed 8200 white and 58% polymorphonuclears.

Since the operation all the abdominal symptoms have disappeared; the bowels have become regular, moving twice daily without the use of laxatives, the patient has gained fifteen pounds in weight, and feels better than for many years.

(C) *Lane's Kink with Acute Suppurative Appendicitis.*

A. P. D. (male), 48 years old. U. S. Clerk. Family history negative. Patient has been troubled with marked constipation all his life. Subject of "bilious attacks" which early in life came infrequently, but increased in frequency as he grew older. For the past six years he has had more or less constant "stomach trouble" which failed to yield to diet or drugs. Early in April, 1915, he suffered from a rather severe attack with his stomach, but was not confined to his bed until April 24th. The following night I first saw the patient when the blood picture showed 20,000 whites and 87% of polymorphonuclears. I advised immediate operation; this, however, was deferred until early the next morning. The appendix was found posterior to the cecum and buried beneath the peritoneal covering of the cecum. It had ruptured and a small quantity of pus was found. Great difficulty was experienced in removing it.

The terminal six inches of the ilium was markedly kinked and closely bound down by strong peritoneal folds. These were carefully dissected away, the ilium freed, appendix removed and drainage used.

Since the operation all stomach symptoms have disappeared, the bowels have become perfectly regular, and the patient has taken on twenty pounds in weight.

Pulmonary Abscess. Three Cases.

Earl H. Mayne, M. D.

Dr. Earl H. Mayne, in closing the discussion, said:

"I have nothing further to say except that I was reminded of an article by Mumford, of Clifton Springs, in this same symposium in which he had gone over the literature very carefully, and he reported that there were only four successful pneumectomies where the entire lobe of the lung had been removed and where the patient had survived. The mortality is tremendously high, and in those cases the operation followed a number of other operations for the cure of the trouble and all of them failed and finally the affected lobe was entirely removed and only four cases up to date have been successful."

Acute Primary Tuberculosis of the Stomach. Operation. Recovery.

Norman Philip Geis, M. D.

E. R., age 20, male, U. S. Admitted to Swedish Hospital, May 10. Discharged May 28th, 1915. Diagnosis, Pyloric obstruction: Final diagnosis: Tuberculosis of the mucous membrane of the stomach.

Family History: Parents living and healthy, also brothers and sisters.

Past Medical History: Measles, scarlet fever with kidney complication.

Present History: Began two years ago with slight dyspepsia and burning pain in epigastrium coming on two hours after eating with regurgatation of gas. This continued for one month when he began to vomit one hour after meals, which relieved the pain. By eating a small amount of food he was able to control most of the symptoms. After one month of this he saw a doctor who put him to bed for three months. He made slow improvement with loss of pain, but gas continued. Was kept on a strict diet for 15 months with but two slight attacks that kept him in bed for two days each. Says that he gained the 20 pounds that he had lost. Three months ago stomach began to swell with gas and had cramp-like pains about 15 to 20 minutes after meals. In less than an hour after eating he would vomit and get relief. Was in bed three weeks and lost 30 pounds. At end of this time he began to improve and pain and vomiting stopped. All right for one week when symptoms returned but the vomitus contained blood and took place immediately after food. Was fairly well for two weeks and gained 15 pounds. Symptoms and pain gradually returned taking one month to reach the blood vomitus. Pain, gas and vomiting of blood increased and he lost 40 pounds. The only relief obtained was from vomiting which now came on 1½ hours after meals.

Examination: Was sent to Swedish Hospital and rested for one week.

Patient emaciated, tongue heavy white fur, pulse 60 and easily compressable, temperature normal; lungs and heart negative. Abdomen; lower border of stomach extends to umbilicus—peristaltic wave easily seen; starting from cardiac end of stomach it went slowly toward pylorus where it seemed to waver for a second and then retraced its route. These waves recurred about every three minutes.

Other abdominal organs negative while bowels moved only by medicine.

Tests meals showed free hydrochloric acid and some lactic acid and blood. Stools contained blood.

Operation. Abdomen opened. Last three inches of stomach and first five inches of duodenum greatly enlarged and hard. Glands all about enlarged and very hard. All the above bound down in a great mass of adhesions. Glands along the lesser curvature of stomach enlarged. Gall-bladder empty and small. Vessels of stomach greatly enlarged and dark red. As this man was in such poor condition it was thought best not to do any extensive operation such as the separation of adhesions or the removal of parts. A posterior no loop gastro-jejunostomony was done.

When the stomach was opened a further search failed to locate any ulcer. The nucous membrane was dull red and greatly thickened, looking like a tubercular condition. It bled easily.

Normal convalescence.

Pathological report on the mucous membrane sent was: Acute tuberculosis of the mucous membrane of the stomach.

After History: He has now gained 35 pounds in weight, is working as an electrician and eats anything and as much as he wants to.

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

JANUARY, 1916

MINUTES OF THE STATED MEETING OF JANUARY 18, 1916.

The meeting was called to order at 9 p. m., by Dr. Russell S. Fowler, who introduced Dr. Ralph H. Pomeroy, the new President for the year 1916.

Dr. Judd moved and it was duly seconded that the reports of the Secretary, Treasurer, Directing Librarian, Trustees and Standing Committees be accepted as printed in the Annual Report.

The minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Mark Gordon, 1076 Eastern Parkway; Baltimore, 1900; proposed by S. J. McNamara; seconded by Membership Committee; Mar., '15.

Otto V. Huffman, 89 Joralemon St.; P. & S., N. Y., 1903; proposed by W. F. Campbell; seconded by F. E. West; Dec., '15.

Jacques Loewe, 71 McKibbin St.; L. I. C. H., 1897; proposed by W. H. Best; seconded by Membership Committee; Dec., '15.

Joseph P. Menasse, 592 Henry St.; L. I. C. H., 1906; proposed by J. J. Sheehey; seconded by Membership Committee; Feb., '15.

William Siegmeister, 1978 65th St.; Fordham, 1913; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

Walter E. Vogt, 191 St. Nicholas Ave.; Cornell 1903; proposed by W. Pfeiffer; seconded by R. S. Fowler; Oct., '15.

Election of Members.

The following duly proposed and accepted by the Council, were declared elected to active membership:

John J. Cahill, 472 51st St.; Albany, 1912; proposed by H. W. Benoit; seconded by Membership Committee; June, '15.

Herbert C. Fry, 356 9th St.; L. I. C. H., 1898; proposed by J. J. Sheehey; seconded by Membership Committee; Mar, '15.

H. W. Mayes, 6th Ave. and Berkeley Place; Cornell, 1912; proposed by R. Durham; seconded by H. K. Bell; Nov., '15.

George B. Reitz, 171 Sands St.; L. I. C. H., 1913; proposed by T. B. Hegeman; seconded by A. J. Salmon; Oct., '15.

Wilhelm E. Stern, 130 Ashford St.; L. I. C. H., 1909; proposed by F. J. Burger; seconded by Membership Committee; Oct., '15.

John E. Wade, 908 Greene Ave.; Univ. N. Y., 1871; proposed by F. W. Bradner; seconded by Membership Committee; Oct., '15.

Applications for Membership.

Applications for membership were received from the following:

Joseph S. Baldwin, 493 Classon Ave.; Cornell, 1913; proposed by R. P. Sullivan; seconded by J. M. Downey;

John B. Byrne, Jr., 224a 6th Ave.; L. I. C. H., 1903; proposed by H. M. Mills; seconded by Membership Committee; Dec., '15.

Henry M. Feinblatt, 374 Union St.; L. I. C. H., 1913; proposed by J. C. Cardwell; seconded by L. F. Warren; Jan., '16.

John H. Flynn, 493 Linwood St.; Tufts, 1915; proposed by J. R. Kevin; seconded by J. A. Lee; Dec., '15.

Morton M. Jenssen, Pier 4, Bush Docks; Univ. Christiania, 1898; proposed by H. Bryn; seconded by S. J. McNamara; Jan., '16.

Charles F. McCarty, 418 E. 28th St.; Fordham, 1913; proposed by J. R. Kevin; seconded by J. A. Lee; Dec., '15.

John J. O'Keefe, 2653 Church Ave.; L. I. C. H., 1908; proposed by E. B. Wilson; seconded by S. J. McNamara; Dec., '15.

Pierre A. Renaud, 48 Prospect Pl.; L. I. C. H., 1913; proposed by R. Durham; seconded by H. K. Bell; Jan, '16.

Nathan P. Thayer, 1433 Ave. H; Harvard, 1905; proposed by E. Bishop; seconded by N. T. Beers.

Wm. C. Waggoner, 167 Taylor St.; Miami, 1903; proposed by S. M. Strong; seconded by A. M. Judd; Dec., '15.

Daniel E. Welch, 135 St. Marks Ave.; Tufts, 1910; proposed by J. R. Kevin; seconded by J. A. Lee; Dec., '15.

Maurice L. Wiesselthier, 612 Bedford Ave.; P. & S., N. Y., 1909; proposed by M. Lederer; seconded by J. H. Isquith.

Scientific Session.

Paper: "A Review of Anesthesia in Obstetrics." By Harvey Burleson Matthews, M.D.

Discussed by Drs. O. Paul Humpstone and Ralph M. Beach.

Paper: "The Profession and the County Medical Society—Where Do They Stand?" By Henry Goodwin Webster, M.D.

Discussed by Drs. Thomas Dixon, Henry A. Fairbairn and Walter H. Ross.

Miscellaneous Business.

Moved by Dr. Judd, seconded by Dr. William Francis Campbell, that the recommendations of the Legislative Committee be received and placed on file and that the incoming chairman be instructed to try and have concerted action by the chairmen of the corresponding committees of every County Society in the State toward forcibly bringing as a body such recommendations to the attention of the State Society and endeavor to get action. He should communicate with these gentlemen by a letter in which is embodied the recommendations of Dr. William J. Cruikshank with one exception, and that is, that there should be no quibbling as to where the money for financing such a movement should be obtained. The general funds of the State Society should contribute a pro-rata share for each of its members.

Dr. Kevin moved that Dr. Judd's motion read,—that it be presented to the State Medical Society through its delegates. Carried.

Dr. Sherwood made the following resolution:

Whereas, It has become evident to the retiring Directing Librarian as well as to several of his predecessors and many others who are interested in the welfare of the affairs of the Society, that the Library of the Medical Society of the County of Kings presents one of its most vital and important problems, as well as one which seems most difficult of solution as set forth more fully in the annual report recently published, be it

Resolved, That it be the sense of the Society at this meeting to request the Council of the Society to take the matters of the Library under consideration and report back to the Society not later than its meeting in May with definite recommendations and plans whereby the affairs of the Library may be placed on a sound, practical, working basis with adequate finances to correct the conditions as set forth in the annual report. Carried.

Dr. Campbell reported that the committee in charge of the Pilcher Semi-Centennial Anniversary had added fifty names to the committee and had organized. The week of March 27th was to be known as Pilcher week in Brooklyn, and that a dinner in Dr. Pilcher's honor would be given on Thursday, March 30th.

Dr. Kevin announced a meeting of the Hospital Surgeons Association on Tuesday, January 25th, to which all interested were invited.

Meeting adjourned 10:45 p. m.

Charles E. Scofield,
Secretary.

NOTES AND NEWS

CONDUCTED BY CHARLES E. SCOFIELD M. D.

READERS OF THE JOURNAL ARE REMINDED OF THE COURTESY DUE TO ADVERTISERS IN THESE PAGES, WHOSE SUPPORT IS LARGELY RESPONSIBLE FOR THE SUCCESS OF THE JOURNAL. PLEASE BE GOOD ENOUGH TO MENTION IN YOUR DEALINGS WITH THEM THAT YOU HAVE SEEN THEIR ADVERTISEMENT IN THE LONG ISLAND MEDICAL JOURNAL. IT WILL HELP ALL AROUND.

* * *

Fear as a Disease-Producer.—The endless chain of cause and effect in which fear and disease are the alternate links is interestingly discussed in the department of editorial comment in *American Medicine* (New York). Fear—"one of the basic instincts of animal life"—has been only subordinated, not abolished, by civilization. It is still "a constant detail of life," the writer tells us; and fortunately so, since it drives us to acts of self-protection that save our lives. Did not dread keep the burned child from the fire, we should be a singed race, like the moths. And most of all do we owe our lives to our fear of disease, in which is rooted all our modern "knowledge of hygiene and prophylaxis and probably many of our ideas of treatment." But not only does the fear inspired by disease tend to curative acts and thus curb itself, but it may also produce disease in its turn, and so end in the chain of evils noted above. The influence of fear upon health is not discussed in the text-books, nor is it considered in the management of the sick, except in the most cursory manner; but the writer asserts that few mental states add more to the burden of the physician, or make his problems more difficult. He goes on:

"That fear is a potent factor in producing abnormal conditions, or at least in accentuating the baneful effects of disease, is a fact established beyond controversy; and yet in spite of its harmful tendencies, fear in some respects is a beneficent force, beneficent in that had we not been possessed of fear, self-preservation would not be the moving impulse it ever has been and is to-day in our life; without fear the human race would probably have perished. Courage and fear are antithetical; courage incites to extinction, fear to self-preservation. We believe courage rarely if ever exists without fear; such a mental condition, alone and unchecked by the caution naturally engendered by fear would have prevented the survival of mankind as well as all other forms of animal life.

"A morbid fear of disease contributes largely to an unbalanced mentality; it disarranges the bodily functions to be later followed by organic dissolution. 'The psychopathic believes himself afflicted with some incurable physical malady such as cardiac trouble or tuberculosis; the phychoneurotic, that he is on the verge of insanity.' Sidis writes that the main source of psychopathic diseases is the instinct of fear with its baneful manifestations of anxiety, anguish, and worry. Darwin writes that 'if we expect to suffer we are anxious.' James regards 'anxiety as morbid fear.' Bain, the 'anxious condition of mind a sort of diffused terror.' In other words, concludes Sidis, 'anxiety is nothing else but the working of the instinct of fear. Religious, social, and moral lapses and superstitions associated with apprehension of threatening impending evil, based on the fear-instinct, form the germs of psychopathic affections.'"

Death from fear is very rare, but the writer narrates an interesting, although painful, incident in the experience of a noted New York surgeon—the late Dr. Robert H. M. Dawbarn:

"Some fifteen years since, a patient, a young and apparently vigorous and sound man, was referred to me at one of our city hospitals for operation in a perfectly simple case of hemorrhoids. Due preparations for the procedure were made, and he was left in a private room to wait his turn in the number of cases detailed for that morning's routine work. The case, however, did not come to operation; in fact, not even to anesthesia.

"As the nurses passed the door of his room during our work on cases which were scheduled to precede his, he would call each into his room and inquire with increasing earnestness and obvious expression of anxiety whether in their opinion the approaching operation might not endanger his life. Finally a nurse reported to us that in spite of their efforts to reassure the patient that the operation was absolutely a safe one, he had grown almost incoherent with fear or fright; she thought that I had better see him. I had been scrubbing up in an adjacent room, but went to him at once and found him at that moment dead. Careful attempts at resuscitation were at once instituted and persisted in, but without avail.

"It developed that the young man carried several life-insurance policies. Because of the anomalous condition as to the diagnosis of cause of death, representatives of these companies were at the autopsy, which was thoroughly and properly made in our presence by a careful specialist. Not a gross lesion was found. The final diagnosis was 'death from fear.' "—*Literary Digest,* Jan. 8, 1916.

LONG ISLAND
MEDICAL JOURNAL

VOL. X. MARCH, 1916 NO. 3

SOME PHASES OF CALCULOUS DISEASE OF THE KIDNEY AND URETER.*

Paul M. Pilcher, A.M., M.D.
Brooklyn-New York.

A REVIEW of the cases which have come under treatment at our clinic during the past five years shows that there have been: 19 cases of renal calculus, 14 cases of calculus arrested in the ureter, and a number of cases of calculus observed in transit from the kidney to the bladder.

In some of the above enumerated cases there was a stone in one kidney and a stone arrested in the ureter on the opposite side.

OF THE RENAL CASES, 5 have been unilateral and the stones were removed by pyelolithotomy without injury to the kidney (two removed by other surgeons). *No mortality*. Two cases have demanded nephrectomy. *No mortality*.

Untreated renal—11 cases—treatment refused, usually because the stones were confined to the pelvis of the kidney and caused very little subjective trouble.

In one case the stone passed as result of medical treatment.

In two cases large accumulations of crystals and granules, passed as result of medical treatment.

THE URETERAL CASES—14 in number. 9 treated medically, and stone passed in 5 cases. Of the remaining 4, two of the stones were removed by aid of cystoscope, and two removed by ureterotomy.

Two ureteral calculi of long standing were removed together with the ureter and kidney.

One ureteral calculus, without medical treatment, removed by ureterotomy.

Two patients refused treatment.

No mortality.

RENO-URETERAL STONES IN TRANSIT—Two cases. Stones passed. No surgical treatment.

THE COMPLICATED CASES form a class by themselves, each being an individual problem.

One complicated case—Bilateral multiple stones. Double pyonephrosis. Pyelolithotomy. Death from uremia.

One case which occurred previous to this series, where complete anuria existed in a single remaining kidney, 11 stones were successfully removed, with recovery of patient.

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* Read before the Brooklyn Surgical Society, May, 1915.

The diagnosis of these cases is most fascinating.

We are called on, first, to determine the presence of a stone and the number of stones; then to orient the same, defining accurately its size, probable consistency and possibility of harm; to give a prognosis and determine the best method of removal; to measure the amount of harm already done the kidney and ureter; to determine the efficiency and functional stability of the companion kidney. This calls for the employment of all the various methods of diagnosis.

Diagnosis. A review of the above mentioned series of cases from the standpoint of diagnosis reveals the facts that,

The *clinical history* is sufficient to establish the presence of a calculus in less than 50 per cent of the cases. It is of little positive value in establishing the location of the stone. The urinary examination is only useful as contributory evidence.

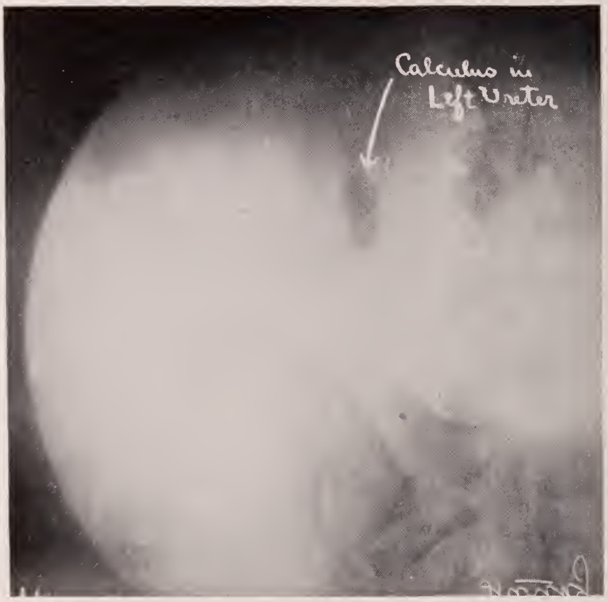

Figure 1

Showing radiograph of left ureter, same patient as Fig. 2. Stone impacted in ureter.

The *X-Ray* is the most useful of all the aids at our command in helping to determine the presence, number and location of reno-ureteral calculi. I wish to reiterate here that I believe that a stone which cannot be detected by the X-Ray, aided by cystoscopy if necessary, is not a surgical problem.

The *Cystoscope* is necessary in every case where medical means fail to remove the stone; by which we mean that, having established the presence of a small stone in the kidney or ureter, it is indicated first to try by medical means to remove the stone. This has been successfully done by us in 10 cases of this series; 5 ureteral cases, 1 renal case, 2 unlocated calculi, and 2 embryo calculi. In such cases it is unnecessary to subject the patient to a cystoscopic examination. If, however, the process of eliminating a ureter stone is slow, but still a possibility, we must know how much damage the blocked ureter is having upon the kidney. In such cases we are forced to pass a catheter into the ureter on the diseased side, measure the renal efficiency by means of various tests, and take a pyelogram of the ureter and pelvis above the stone to see the amount of dilatation of the same. The X-Ray is used in connection with the cystoscope to watch the progress of the stone.

In all of our complicated cases it is necessary to make a complete cystoscopic examination, complete X-Ray study and to weigh carefully all contributory evidence available. The clinical history, the general condition of the patient, the microscopical and chemical analyses of the urine, the function of the kidney, all have an important bearing.

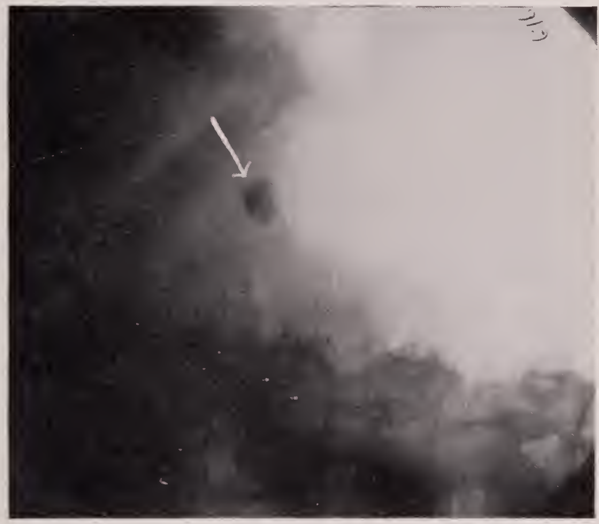

Figure 2

Radiograph showing stone contained in pelvis of right kidney, referred to in Case I. This was extracted by ureterotomy. Stone was impacted in left ureter of same patient.

Solving the Complicated Problems in Renal and Ureteral Lithiasis—Often times we must go still further in our study of a given case of renal calculus. Our direct, deductive, and differential diagnosis have been completed; we know that a calculus is present; we know its position; we know, to a certain degree the amount of damage that has been done. Then a new factor enters, for we find that the other kidney or ureter also contains a calculus. The question then arises: which side shall we attack first? How far can we safely go? To pursue this subject to its logical conclusion would involve an extensive treatise. The author will limit himself here to the presentation of a few illustrative cases which have come under his observation.

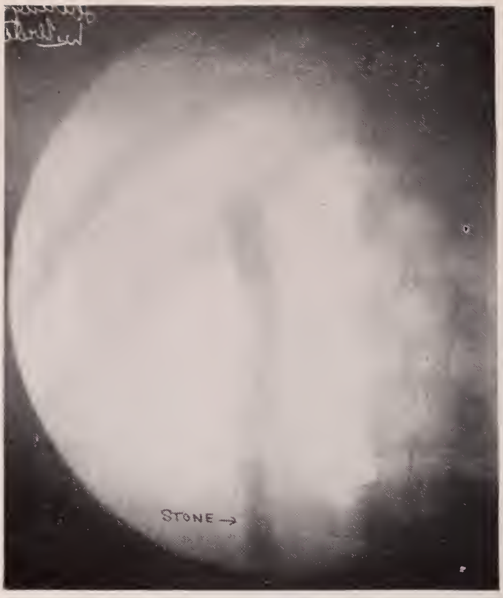

Figure 3

Same as previous case. Stone impacted in left ureter. Pyelogram showing dilatation of ureter above stone.

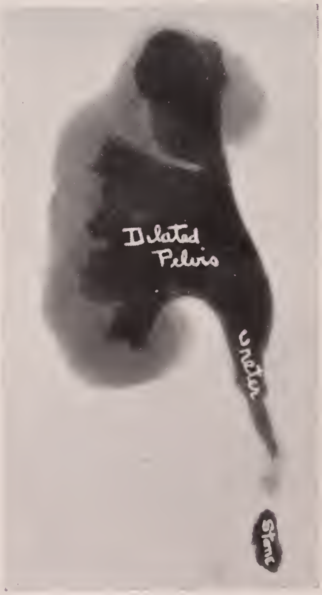

Figure 4

Radiograph of injected ureter and kidney with stone in lower portion of picture. Taken post-operative. Referred to in Case 1.

ILLUSTRATIVE CASES.

Case 1. Diagnosis—*Right renal calculus, left ureteral calculus, pyonephrosis of left kidney.*

Patient referred by Dr. G. J. Dirkes, of Brooklyn.

Patient has been suffering for 20 years from symptoms referable to her kidneys and bladder. She has at no time passed blood, but her urine has contained a deposit and there have been evidences of bladder irritability. The diagnosis under which she has been treated is nephritis. She was referred from New York to Dr. Dirkes, in Brooklyn, and he suspected the presence of renal calculus and suggested that X-Ray plates should be taken.

Cystoscope shows very little trouble in the bladder. Both ureter openings were normal. Catheter passed part way up the left ureter where it is blocked. The urine, however, passes the blocked area and comes through the catheter slowly. Catheter passed successfully to the right kidney and the urine collected from it rapidly.

Functional test of the right kidney, phthalein appeared in 7 minutes in good quantity. From the left kidney it did not appear for over 30 minutes.

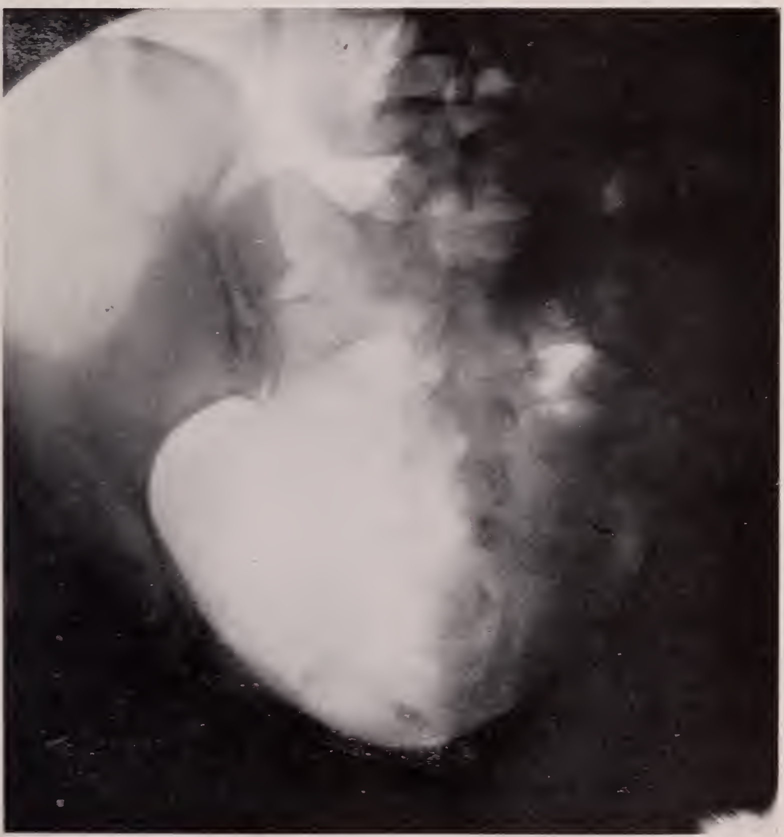

Figure 5

Radiograph showing stone impacted in vesical portion of ureter referred to in Case 2. Extracted by aid of high frequency current through cystoscope.

X-Ray examination showed the left ureter blocked by a stone (Fig. 1) and suggestion of other stones in the left kidney to be inquired into later.

The radiographic picture taken at the Pilcher clinic showed distinctly that *a stone was contained in the pelvis of the right kidney,* (Fig. 2) that there were no other stones in the right kidney and that the right kidney was of normal size although somewhat fixed. We also knew that the function of the right kidney was normal. The left ureter was known to be blocked some distance from the kidney and its function very greatly impaired. There was a hydronephrosis of the left kidney. The proposition, then, was first to remove the stone from the pelvis of the right kidney by means of pyelolithotomy, because, if the operation were done on the left kidney first and it should be found necessary to remove it, the operation on the right kidney would be extra hazardous. Whereas, if an accident took place during an operation on the right kidney, and the left kidney was still functionating, the chances of recovery would be greater. Therefore, it was decided to operate upon the right kidney first.

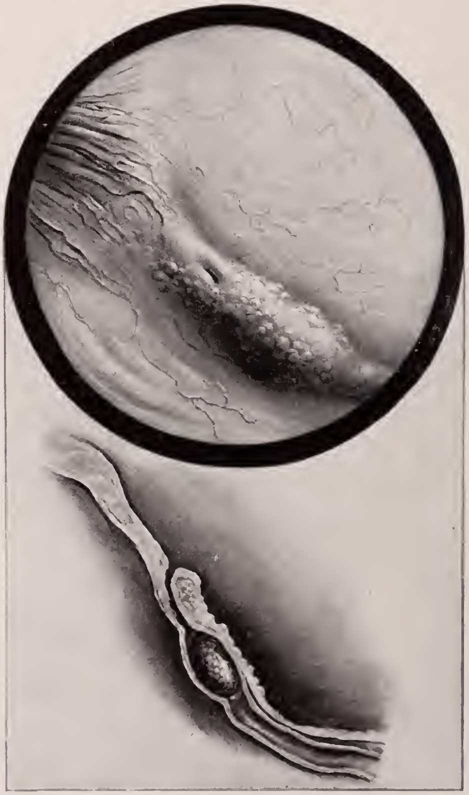

Figure 6

Calculus impacted in vesical end of ureter. On the left the cystoscopic appearance showing the stone along the course of ureter. Edema typical of stone impacted at this point. On the right a sectional view showing the anatomical relations of the stone. This corresponds to the previous Fig. 5, which is a radiograph showing the stone arrested at this point.

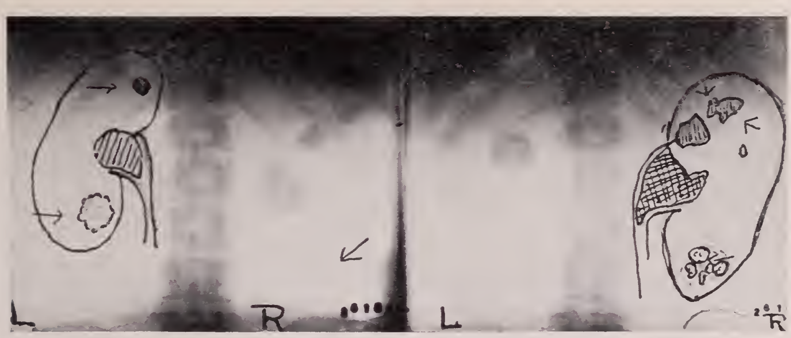

Figure 7

Steroscopic Radiograph of the kidney regions in a complicated case. The writer has outlined in ink his interpretation of the position of the various stones in the kidney. On the left side the pelvic outlet is occupied by a large stone. In the lower pole of the kidney is seen an irregular concretion, and judging by its relative circumference and the very slight shadow which it casts on the X-ray plate, it is estimated that this mass is made up of calcareous deposits on the wall of a dilated portion of the kidney and is not a free stone. The same is true of the single shadow in the upper pole of the kidney. The right kidney is seen to be enormously dilated and its pelvis blocked by an enormous stone with a series of stones in the upper pole, and the lower portion of the kidney is occupied by a mass of concretions evidently attached to the pelvic wall of a large hydronephrotic sac. The problem in this case was to relieve the patient from advancing uraemia and a continuous exhausting haematuria. It was decided to do a pyelolithotomy of the left kidney.

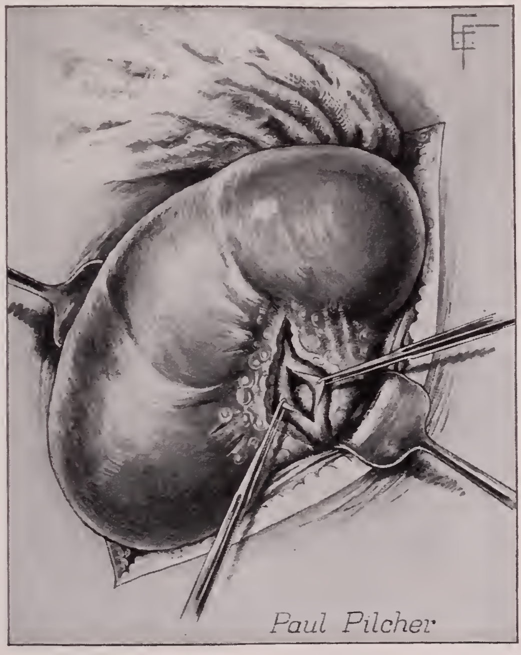

Figure 8

Pyelolithotomy. Extracting stone from pelvis of kidney or first portion of ureter without injuring parenchyma of the kidney itself. The feasibility of accomplishing it can usually be determined before operation.

Operation—Ureterotomy for Renal Calculus, April 4, 1914, by P. M. Pilcher.

An oblique incision was made below the lower border of the ribs on the right side beginning 2 inches from the centre line of the back, carried downwards to the crest of the ilium and then forward. A short extra rib was resected. The kidney was buried in fat that was very adherent. During the operation the peritoneal cavity was opened and resutured. The pelvis of the kidney could not be safely exposed on account of many adhesions and inflammatory infiltration around the pedicle, therefore, the right ureter was exposed for a distance of 2 inches downward from the kidney. A longitudinal incision ½ inch in length was made in the ureter about 1½ inches from the kidney pelvis. Ureteral forceps were inserted into the opening in the ureter and the stone which occupied the pelvis of the kidney, as seen in Fig. 1, was removed. The opening in the ureter was partially closed by using two catgut sutures. This was done because the opening in the ureter was unusually long. Three drains were introduced, one on each side of the kidney and one down to the opening to the ureter. The wound was closed except for the drains.

The wound healed by primary union with the exception of the drainage opening to the ureter from which urine came for about two weeks. Patient made a good recovery.

It was our plan after six weeks to remove the stone from the left ureter. Patient, however, refused further operation and returned in April, 1915, one year later. During the interval had had many attacks of pain, fever, and the obstruction of the kidney was inevitable. Cystoscope showed obstruction of the left ureter and pyonephrosis of the left kidney. X-Ray showed stone impacted in ureter opposite the fourth lumbar vertebra. The pyelogram with argentide showed hydro-ureter and dilated pelvis of left kidney. (Fig. 3.)

Second operation—Nephrectomy of Left Kidney, Ureterectomy, Removal of stone from ureter, April 19, 1915, by P. M. Pilcher.

Kidney exposed found to be diseased beyond recovery. Kidney, left ureter and stone removed. Fig. 4 shows stone, injected ureter and extent of destruction of the kidney. X-Ray taken after operation. Post-operative course uneventful. Full recovery.

This case is a fair example of some of the complicated questions which arise in solving the calculus problems. It demonstrates very well the necessity of having a complete examination made in cases of repeated attacks of renal colic with invalidism resulting. It shows the value of the X-Ray, the cystoscope, the functional test of the kidney, the pyelogram and conservative attack upon the ureters and kidney.

Just one other case to show another problem, that is, the question of stone impacted in the vesical end of the ureter. This quite frequently occurs with small stone.

CASE 2. *Diagnosis. Impacted Ureteral Stone.*

Patient a young woman about 27 years of age, typical history of stone descending the ureter with blocking of ureter and pain in the kidney. The stone was watched by means of the X-Ray and found to have become impacted in the vesical portion of the ureter. (Fig. 5) Medicine failed to dislodge it. Cystoscopic examination made and catheters and instruments could not be made to enter the ureter on that side; attempts to dislodge stone unsuccessful. Swelling of stone could be seen from inside of bladder (Fig. 6). High frequency spark, destruction of tissue, using the high frequency spark through cystoscope. Tissue overlying stone was subjected to high frequency spark. Oudin current. As a result of this application there was a sloughing of the tissue overlying the stone and stone dropped into the bladder. Radiograph taken in this case is shown in Fig. 5. The position of stone and appearance of same from the bladder side is shown in Fig. 6.

These cases are given simply as examples of the various factors which enter into the calculus problem.

TREATMENT.

First, an X-Ray (picture 1) should be taken to determine, if possible, the size and position of the stone. If the picture shows a calculus which seems small enough to pass through the ureter, it is indicated to give the patient the benefit of medical treatment, the details of which it is not necessary to discuss here. Suffice it to say that, of the 12 cases in which we advised preliminary medical treatment, the calculus was passed spontaneously in 8 cases (66-2/3%); was extracted with the aid of the cystoscope in 2 cases (16-2/3%); and demanded ureterotomy in 2 cases (16-2/3%); *i.e., Surgical operation was avoided in 83½% of the cases of small calculi.*

If the stone is not passed spontaneously, then a cystoscopic examination should be made. Cystoscopic methods instituted for removal of the stone, and the functional efficiency of the kidneys determined.

If the stone is confined to the kidney, a pyelolithotomy should be done if possible (Fig. 8). Nephrectomy being reserved for the hopelessly damaged kidney.

If the stone is confined to the ureter above the brim of the pelvis, it should be removed by the posterior lumbar route, as described by the essayist.

If the stone is contained in the vesical portion of the ureter, the stone should be removed through the bladder.

If the stone is contained in the pelvic portion of the ureter, the operator must choose his own method.

INFECTIONS OF THE MOUTH, EAR, NOSE AND THROAT AS PRIMARY FOCI FOR SECONDARY INFECTIONS.*

From the Standpoint of the Oral Surgeon, with especial reference to Arthritis and Endocarditis.

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I AM going to present this problem from the standpoint of the oral surgeon and give the oral infectious lesions as one of the many causes of secondary infections. By oral infections, I mean those occurring in the mouth, and include particularly those infections around the teeth such as pyorrhea alveolaris, and at the ends of the tooth roots, the blind dental abscess.

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* Read before the Brooklyn Society for Internal Medicine, Nov. 26, 1915.

Pyorrhea alveolaris, or alveolodental pyorrhea, as we all know, is a chronic infection occurring about the necks of the teeth. It is quite readily recognized on inspection, by a reddening of the gingival margin of the gums about the teeth. In the advanced cases the gums have receded from the necks of the teeth, they are swollen and spongy, and sometimes have a purplish hue close to the teeth. On pressure of the gums about the affected teeth a drop of pus will generally be squeezed out, which is quite easily recognized, but must be differentiated from impacted food-debris, which lodges about the necks of the teeth in those patients to whom a tooth brush is a strange and unknown possession. On closer examination of the affected teeth a deep pocket will be found where absorption of the wall of the bony socket has taken place. A rough deposit of either salivary or ceruminal tartar, will usually be found on the sides of the tooth and root, running down below the gums. It is believed that this deposit has an important bearing on the etiology of this disease. Tartar deposits are a foreign body and by their contact with the normal tissues about the necks of the teeth, inflammation is produced. Our study of the histology of the parts teaches us that the teeth are held in the bony sockets by the alyeodental ligament which allows a slight range of mobility of the teeth and acts as a cushion for them. The slight friction caused by these tartar deposits against the soft tissues, due to the slight mobility of the teeth in mastication, produces an inflammatory lesion with a slight sloughing or absorption of the tissues about the tooth. The pus so produced varies greatly according to the extent of the lesion, but it is safe to suppose, that a considerable quantity is absorbed or ingested by the system in the course of each twenty-four hours.

The blind abscess at the end of the tooth-roots is the type of infection which causes so many of the secondary infectious disorders. This is the type of abscess, which goes unrecognized by both the physician and dentist, on casual examination. In this type of abscess the use of a Rontgentogram is essential to a proper diagnosis. The prevalence of this type of abscess may be shown from a report of 500 cases from the University of Minnesota Hospital, in which Hartzell reports sixty-eight per cent of all artificially-devitalized teeth were found to have apical abscesses. From our observations in the Oral Surgical Clinic of the New York Post-Graduate Hospital we find that over seventy per cent of all teeth having crown and bridge work on them have abscesses at the apices of the roots.

The etiology of these abscesses may be classified under two heads:

First: Those of extrinsic origin and those of intrinsic origin. Those of extrinsic origin are caused from either one of two sources—first, carious condition of the teeth, in which the tooth pulp is exposed, resulting in its subsequent death, and the infection traveling through the dead pulp into the root canals to reach and infect the periapical tissues. The second cause, is faulty dental technique in the process of root-canal fillings, where infections have been introduced through unsterile instrumentation and filling materials.

Those abscesses of intrinsic origin are usually hematogenic, resulting from either thermal or traumatic death of the pulp; and irritation by either excessive heat or cold in a tooth which has either a large metallic filling near the pulp, or has a metallic crown covering the tooth. These act as excellent conductors for thermal changes and the irritation so caused, will result in the death of the pulp.

Those of traumatic origin follow a mechanical injury by violence. The injury so produced will cause the death of the tooth.

The study of focal infections about the apices of teeth from an intrinsic origin has been the subject of much discussion. Rosenow writes: "It would seem, therefore, that focal infections are no longer to be looked upon merely as a place of entrance of bacteria, but as a place where conditions are favorable for them to acquire the properties which give them a wide range of affinities for various structures." We do know, however, that in the death of a tooth pulp, from whatever cause, there is a lowered resistance in the adjacent tissues, due to the presence of necrotic nerve-vascular tissue, therefore forming an ideal nidus for bacterial growth.

Hartzell and Henrici have been making extensive researches of the bacteria found in pyorrhea alveolaris and apical abscesses. Their report confirms the researches of Rosenow, Gilmer and Moody. In 162 cases in which cultures were taken, they found that the streptococcus viridans was present in 150 cases. Gilmer and Moody report the presence of both the streptococcus viridans and streptococcus hemolyticus, as well as other organisms, such as the staphylococcus aureus, micrococcus catarrhalis and the bacillus fusiformis. I have no doubt but that these latter organisms are perhaps contaminations in the technique of obtaining cultures.

Considerable has been written in the past eighteen months about the presence of the endameba buccalis (or gingivalis of Gros as it is now called) in the lesions of alveolodental pyorrhea. Barrett and Smith, of the University of Pennsylvania, have found these endameba present in 318 out of 346 cases examined. They believe that the endameba gingivalis (Gros) is the cause of a large number of cases of pyorrhea. Bass and Johns, of New Orleans, have written considerable on this subject, but apparently they seem to be carried away by their enthusiasm. The latest reports do not tend to confirm the endamebic theory. They undoubtedly act in symbiosis with the other bacterial organisms present. Various forms of spirochetes have been found to be present in these lesions by recent investigators. There is much yet to be done in the study of this widespread malady.

We have been making a careful study of the organisms obtained from infections about the teeth at the New York Post-Graduate Hospital, and we invariably find the streptococcus viridans present at the apices of nearly all infected roots of teeth. It is essential, however, that a very careful technique should be used in taking cultures from these areas, as contamination from the oral cavity is easily accomplished. We know that the streptococcus viridans is normally present in the mouth, as well as many other pathogenic organisms. In view of this fact, we have developed a technique with the idea of excluding all the normal bacteria of the mouth and obtaining only those organisms which are present in the lesion. The infected tooth is packed off with sterile gauze and the adjoining tissue dried. It is then painted with tincture of iodin on a swab. The tooth involved is grasped by a sterile extracting forceps and, under the influence of conductive anesthesia, the tooth is carefully removed, using precautions to cause as little traumatic injury to the tissue as possible. In withdrawing the root care is, of course, observed to keep it from touching the adjacent structures in the mouth. If an abscess sac is found adherent to the end of the root, it is cut off with sterile scissors and dropped in a culture tube. If there is no sac present, a sterile swab is rubbed over the end of the root and also the end of the root itself is oftentimes cut off by a sterile rongeur or bone-cutting forceps and dropped in the culture tube. When pus is to be obtained from pyorrhea, the area is packed off with sterile gauze, dried and painted with iodin. The pus is obtained by pressure on the gum. The first pus expressed is wiped off with a sterile swab, because it has been contaminated or else the iodin has killed the organisms, and then the subsequent pus expressed, is taken for culture on a sterile swab. The media which is best suited for the cultivation of these organisms is sterilized ascitic fluid. The streptococcus viridans and hemolyticus are of rather slow growth and do not grow very prolifically on ordinary culture media. Rosenow uses ascitic fluid, to which is added dextrose broth and sterile guinea pig kidney or heart muscle.

From the evidence at hand from various sources of investigation, it seems reasonable to believe that focal infections are responsible for many of the secondary infections in the body. Perhaps many of us are liable to let the pendulum swing too far and believe that the source is in that particular field that we as individual specialists are working in. For example, the otologist feels that infectious foci in the ear are responsible for many cases of secondary infection. The rhinologist and laryngologist feel that the infections in the tonsils, nasopharynx, nose and accessory sinuses are the primary foci, while the oral surgeon feels that his field is responsible for many, all of which is true, as primary foci of infection are found in all of these regions. It is true that a specialist in any of these fields sees more cases originating from the region in which he is interested because the patient is referred to him in many instances by the general practitioner, because there is some evidence that the primary focus is in his province, or that the evidence is obscure and that a process of elimination is necessary.

I am firmly convinced, from the investigations of others and the various cases coming to my notice, that the dental path is one of the common causes for many of the cases of secondary infections in the gastrointestinal tract, in the joints and in the heart, not to mention the lesions in the kidneys and other organs.

The secondary infections of gonorrhea which attack the joints, producing a gonorrheal arthritis, have been well worked out clinically and are conceded by most of the profession. Is it not reasonable to believe that other focal infections are responsible for secondary lesions?

At the New York Post-Graduate Hospital it has become almost a routine procedure to refer all cases of anemia, endocarditis, gastroenteritis and arthritis in which oral infections are evident or obscure, to the Department of Oral Surgery for examination and treatment of the oral lesions. Rontgentograms in the form of films or plates, are taken of the teeth as a preliminary procedure. These cases are almost invariably found to have chronic apical abscesses at the roots of all dead teeth. Many of the arthritic cases have to be wheeled in on rolling chairs.

After removing all infected foci in the mouth we invariably supplement the treatment by the systematic employment of autogenous vaccines. The major portion of these cases are remarkably benefited by this treatment. If the oral infections, are the only foci, and the secondary lesion has not been of too long standing, the response is fairly rapid. It would be expecting too much to expect to find long-standing cases of arthritis and endocarditis in which retrogressive changes had taken place in the tissues, to respond very readily to any form of treatment. The damage already done cannot be repaired, but the elimination of the primary foci will so better the general systemic condition that slight compensatory changes will result beneficially to the patient. The cases of acute arthritis and endocarditis respond very favorably to treatment in many instances. We have had two cases in the past six months of exophthalmic goitre in which marked oral infections were present. The elimination of the infections, combined with the use of autogenous vaccines, has helped these two cases materially; that is, the tachycardia and tremor have decreased, as well as the optic protrusion and enlargement of the thyroid glands. One of these patients had an empyema of the maxillary sinus which we opened and drained. After five months of treatment she says that her condition is better than it has been in years and the extreme neurotic symptoms which have been present, have practically entirely disappeared. Just what the connection between exophthalmic goitre and oral and sinus infection, is, I am not in position to state.

I desire to report the following cases:

Mrs. D., age forty-eight:

The patient had always been healthy until she was thirty years of age. She then had rather frequent stomach disorders. Five years ago the patient had a severe attack of enterocolitis and she was confined to bed the greater part of the winter. The patient tells me that for the last four years the phalanges have become stiffened and on examination of her hands a marked arthritis deformans was noted. On the right hand her last phalanx was so deformed that it stood at an angle of nearly forty-five degrees with the rest of the finger. There was marked thickening of the distal phalangeal joints of both hands The patient had an acute arthritis in both ankles when presented, and it was with great difficulty that she was able to walk. Her physician had referred her to me for examination of her mouth, as he believed that her teeth were the primary foci of infection. On examination of the mouth I observed considerable bridge work, as she had lost about fifteen teeth. A closer inspection showed a small fistula over the region of the upper left lateral incisor root and an inflammatory condition of the gums about the necks of four or five teeth. Rontgentograms were made of the mouth and showed several teeth having blind abscesses at their roots. The tooth having the fistula showed a large area of necrotic bone. The treatment consisted in the extraction of three of the teeth having blind abscesses on the roots. An apictectomy was performed on the upper left lateral incisor. A semicircular incision was made over the region of the tooth and with a large bone drill in a dental engine, an opening was made into the large area of necrotic bone, laying bare the apex of the root, which was cut off cleanly a half centimeter from the tip. All necrotic bone was removed with a sharp curette. The cavity was packed with iodoform gauze for three or four days, after which another incision was made so that the edges of the soft tissue could be brought together with a suture. A culture was taken from the ends of the infected teeth and showed the presence of the streptococcus viridans. An autogenous vaccine was prepared and administered every five days, starting with an initial dose of one-half c.c. containing 250,000,000 bacteria. At the end of the third or fourth injection, there was quite a noticeable improvement in the ankles, and at the end of the tenth injection the improvement was sufficient to allow the patient to walk with some ease. The deformity in the hands has not changed to any appreciable degree.

I might cite a case of subacute endocarditis which occurred in my hospital work.

Patient, female, age twenty-six:

Previous personal history: The patient had always been strong and robust until three years ago. She had measles and whooping cough during early childhood. For the past two years the patient has complained of loss of appetite and frequent pains in her shoulder and knee.

Present history: The patient came into the hospital complaining of precordial pain, and attacks of vertigo, and irregular fever.

On examination, the heart sounds were prolonged, and a distinct mitral murmur was observed. The patient ran an irregular pulse and temperature for several weeks.

Examination of the mouth showed a chronic fistula over the region of the lower right first molar. Her teeth showed all the signs of neglect. A lower left second biscuspid tooth was broken off and the root remained with a discharge of pus on pressure. Rontgentograms showed the presence of three foci of infection at the roots of the teeth. These teeth were removed and the sockets curetted. A culture from one of the roots showed a pure culture of the streptococcus hemolyticus. The patient was put on systemic treatment by the physician in charge and an autogenous vaccine was administered every fifth day. After the third injection of vaccine the temperature averaged a degree lower and after the fifth injection the temperature was practically normal and the mitral sound was only slightly roughened. At present no abnormal sounds can be heard on auscultation.

In conclusion, I wish to reiterate that the infections about the teeth are but one of several sources of secondary infections. It is very important in obscure cases that a Rontgentogram should be made of the teeth to exclude them as a factor or establish the presence of an infectious foci in that region. Rosenow, of Rochester, Minn., has been doing some very interesting experimental work on the elective localization of the streptococci, which I hope will be followed up and worked out by others.

(For discussion see p. 126.)

INFECTIONS OF THE MOUTH, NOSE AND THROAT AS PRIMARY FOCI FOR INFECTIONS IN THE GASTRO-INTESTINAL TRACT.

With suggestions for a newer therapy of gastro-intestinal infections.

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THE frequency with which infections of the mouth and nose accompanied disturbances in the gastro-intestinal tract was noted for years before a definite relationship was established between the two. "Bad teeth" and "nasal catarrh" were more often attributed to stomach trouble than stomach trouble to the mouth or nose infection. While it was generally admitted to be possible that the swallowing of infective material might cause disease of the stomach, no such definite relationship was proven. It seemed to many that a surface so admirably protected from infection and injury as the gastric mucosa could only with great difficulty become the seat of an infection, and then only after a laceration of the mucosa. The finding of living bacteria in practically all stomach contents examined only tended to confirm our belief in the resistance of the mucosa to infection from the surface. Two years ago, however, Rosenow's studies of the streptococcus resulted in a report of the production of typical gastric ulcer and at times of attendant appendicitis, cholecystitis, nephritis, arthritis and myositis, by the intravenous injection into various normal animals of live cultures of the streptococcus viridans, thus proving that these diseases could result from a hematogenous infection, and not necessarily from swallowed infective material. These experiments, since confirmed and supplemented by other observers, were carried on with streptococci identical with those almost always found as the infecting agent in infections of the mouth, nose and throat. The finding of identical types of streptococci in the oral and nasal foci and in sections of resected gastric ulcers and appendices in man has added further proof to the relationship between the two infections.

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* Read before the Brooklyn Society of Internal Medicine, Nov. 26, 1915.

Since the publishing of these reports, the writer has carefully sought for these primary foci of infection in all cases of infections of the gastro-intestinal tract, and has invariably been rewarded by finding definite foci, cultures from which produced the streptococcus viridans. Some experiments were started by the writer to establish the relationship between pyorrhea and gastric ulcer, live cultures of the streptococcus viridans obtained from the pyorrhea pockets of patients with operatively demonstrated ulcer being injected into the ear veins of healthy rabbits. Unfortunately, however, owing to unavoidable causes, these experiments were never completed, only two of six rabbits so injected coming to autopsy. One showed a typical gastric ulcer on the posterior wall, near the pylorus; the other gave evidence of an ulcerative colitis and an acute nephritis. No further experiments along this line have been attempted.

It has been extremely interesting, however, to note the almost invariable presence of infective foci in cases of gastro-intestinal infections. These foci, with a few exceptions in cases where they were located in the skin (boils or erysipelas), rectum (ischiorectal abscess), or pelvis (post-partum or post-abortal infections), were usually found in the mouth, nose or throat. Table 1 shows the relative frequency of these different focal infections in a series of gastro-intestinal cases observed in the Brooklyn Hospital Dispensary. The writer has grouped infections of turbinates, sinuses, posterior nasal fossa, tonsils, etc., under the heading of nose and throat infections, and all cases of infections of teeth and gums, past or present, under the heading of pyorrhea. Nearly all cases of infections of the nose and throat had a pyorrhea also present, but not all cases of pyorrhea showed infections of the nose and throat. This raises the question whether pyorrhea may not be an etiological factor in many of these infections of the nose and throat and explains why treatment of the latter conditions is unsuccessful if the teeth are not attended to. In the table cases showing infections in both mouth and nose and throat are placed under the heading of pyorrhea. Under the heading of gastric ulcer, gastric and duodenal ulcer are included.

Table I.

Disease	Total Cases	Pyorrhea	Nose & Throat Infections	Pelvic Infections	Skin Infections
Gastric Ulcer	64	57	6	–	1
Appendicitis	41	26	3	11	1
Gall-bladder Disease	18	17	–	1	–
Diabetes	5	5	–	–	–
Gastric Carcinoma	8	8	–	–	–
Total	136	113	9	12	2
Per cent		83	6	10	1

Diabetes and carcinoma, whose infective origin has, of course, not been proven, were added to the table merely because of the suggestiveness of the findings in these cases.

The objection may rightly be raised that the average dispensary patient shows pyorrhea merely as one of the evidences of neglect, and that a series of any kind of cases, infective or not, might show evidences of mouth or nose and throat infection. While this is probably true to a large extent, nevertheless even in private patients who exhibited every sign of the utmost care of the mouth and nose, infections were invariably found, although often examination by an expert oral surgeon or a laryngologist was necessary and the X-ray needed to be used as an aid to diagnosis. A recent series of private cases is shown in Table II.

Table II.

Disease	Total Cases	Pyorrhea	Nose & Throat Infections	Pelvic Infections	Skin Infections
Gastric Ulcer	34	23	9	–	2
Appendicitis	9	3	4	2	–
Gall-bladder Disease	6	5	1	–	–
Diabetes	3	2	1	–	–
Gastric Carcinoma	3	2	1	–	–
Total	55	35	16	2	2
Per cent		63	29	4	4

The relatively lower percentage of cases of pyorrhea as compared with that of the dispensary cases, is about as would be expected from persons in whom esthetic considerations would induce better care of the teeth, but the percentage is still startlingly high.

The writer has been so much impressed with the invariable association of some definite focal infection with infective lesions in the abdomen, that he now feels considerable doubt as to the presence of gastric ulcer, appendicitis or gall-bladder infection in cases which present the clinical symptoms of such conditions, but fail on careful questioning and examination, to disclose a focus of infection, past or present, as the causative factor. So far as is known, however, there is no definite time in the history of a pyorrhea that the secondary infection develops. Persons may have pyorrhea for years without definite signs of secondary foci of infection. Over one-half of the patients applying for treatment in the Gastro-enterological Clinic at the Brooklyn Hospital Dispensary, show evidences of pyorrhea, but, as is shown in Table III, only fifty-five per cent show evidence of an infective process in the gastro-intestinal tract. Table III shows a series of 180 cases of pyorrhea, with a tabulation of the principal conditions found in these patients.

Table III.

Disease	Number of Cases	Per cent
Gastric Ulcer	57	32
Appendicitis	26	14
Gall-bladder Infections	17	9
Diabetes	5	3
Carcinoma	8	5

Functional Gastro-intestinal Diseases	18	10
Visceroptosis	20	11
Pelvic Diseases	12	7
Miscellaneous	17	9

The first three diseases, of infective origin, were found to be present in fifty-five per cent of the cases of pyorrhea applying at the clinic. The remaining forty-five per cent had evidently developed no secondary infection in the gastro-intestinal tract, although many showed evidence of other secondary infections, such as arthritis, endocarditis and nephritis.

An observation which has done much to impress upon the writer's mind the certainty of a connection between the infective foci in mouth or nose and the infective gastro-intestinal conditions, has been the nature of the reaction produced in such patients when injected with autogenous vaccines made from infective material obtained from the foci in the mouth or nose. Fifty-two cases have now been so treated and the reactions were usually as follows: After the first injection, which usually consisted of from fifty to one hundred million streptococci, the patient experienced a more or less distinct general reaction, with malaise, slight feverishness and aching of joints, together with some exacerbation of the local symptoms in the mouth and nose. Accompanying this reaction there was usually a fairly definite increase in the severity of the symptoms of the abdominal lesion, such as increased pain, nausea, or vomiting, belching, distention and the like, as would be expected from a local hyperemia at that point. These reactions appeared in from six to eighteen hours and lasted from eight to thirty-six hours, being succeeded by a general feeling of well-being and a marked relief from the gastro-intestinal symptoms, independent of the diet taken or the medication prescribed. Reactions after subsequent, increasing doses became progressively less severe and continued improvement was noted in the patients.

In the writer's opinion, the accepted lines of treatment for infective conditions of the gastro-intestinal tract require a revision in accordance with our newer knowledge of the etiology of these conditions. It is not alone sufficient to diet and medicate or operate upon our gastric ulcer patients, to drain or remove gall-bladders or to remove appendices. Unless the primary infective focus be removed, the patient is liable to a recurrence of peptic ulcer at the same or at another part of his gastro-intestinal mucosa, or to the development of peptic ulcer after appendix removal or gall-bladder drainage. Such cases have been of frequent occurrence in the past, but have never been fully explained before, being often attributed to lack of observation or error in technique on the part of the operator. A few brief instructive histories follow:

1. E. M., 46 years of age, a watchman, always a heavy drinker, with a negative family and previous personal history, first began to have typical ulcer symptoms nine years ago and finally developed a pyloric stenosis, operated upon six years ago, a pylorectomy and Murphy gastro-enterostomy being performed because of the patient's poor condition on the table. He remained well for two years after this and then, after a recurrence of ulcer symptoms developed an hourglass stomach, for which a posterior gastro-jejunostomy was performed. One month later the ulcer symptoms returned and examination by the X-ray and esophagoscope disclosed an ulcer at the gastrojejunostomy wound. Laparotomy a few months ago disclosed a car-

cinoma at this point—inoperable. This man had a severe pyorrhea, and after his first two operations developed a pneumonia, probably as a result of this. Before his third operation, however, the teeth had been cleaned up and he had an uneventful convalescence. His symptoms have been much relieved by a vaccine made from his pyorrheic discharge.

2. H. H., 58 years of age, a bookkeeper, with a good family, previous and marital history, first developed epigastric pain two to three hours after eating, vomiting, etc., eighteen months ago. One year later he was operated upon for a duodenal ulcer, a gastrojejunostomy being performed. A bad pyorrhea was not treated. Six weeks after operation he began to have symptoms of ulceration of the lower end of the esophagus. Two months ago evidence of an epithelioma of the esophagus was obtained and the patient is now being treated with radium at the General Memorial Hospital, New York City.

3. A. K., 19 years of age, an electrician's helper, had never been ill till eighteen months ago, when he began to have right lower abdominal pains at intervals. Six months ago he had a chronically-inflamed appendix removed. After the operation he gained fifteen pounds and felt well till six weeks ago, when he began to have epigastric pains one hour after eating, relieved by food or vomiting, and very bad at night. Examination showed a duodenal ulcer to be present and a marked sinus infection was found in the nose. He remembers always having "catarrh." He is improving under appropriate treatment.

4. N. B., 39 years old, a junkman, was well until four and one-half years ago, when he began to have attacks of right upper abdominal pain, radiating to the right scapula and accompanied by jaundice and clay stools. About three years ago he had an operation performed for gall-stones. One month later the pains apparently returned, but associated with tarry stools and vomiting. He had three more attacks in the course of a year and then applied for treatment. He had a bad pyorrhea, and evidently a gastric ulcer. He was relieved by appropriate treatment for ulcer and after five weeks' observation, was lost track of.

These few case-reports are typical of many other similar ones which could be cited, and illustrate the importance of the removal of the underlying cause at the same time as the removal of the infective lesion in the abdomen. In cases that are to be treated medically, proper and adequate surgical care of the mouth, nose and throat should be carried on, together with other measures, and will often obviate the necessity for operation by preventing complications. In cases requiring surgical intervention, the focal infections should, if possible, be removed before the operation. This would, of course, not be practicable in acute conditions requiring immediate operation, but in chronic conditions requiring operation, would not only help in the cure and probably avoid complications, such as adhesions or infections elsewhere, but would make the anesthesia safer and aspiration pneumonia less possible. Adequate care of the teeth would not mean the now practically-abandoned use of emetin in pyorrhea, but proper incision and drainage of pus pockets, and scaling, or even extraction, of the teeth. Nose and throat treatment would necessitate such procedures as septum removal, drainage of sinuses and removal of infected tonsils or adenoids. If both mouth and nose and throat infections are present, both would require treatment at the same time, as neither one can be successfully treated without the other. Before treatment of the focal infection is started, it is well to give several doses of autogenous vaccine, to prevent the evil consequences of septic absorption from these vascular areas as a result of the surgical procedures. In making cultures for vaccines, if the streptococcus viridans is not found, further cultures should be made, as it is essential to use a streptococcus viridans vaccine. Mixed stock vaccines have not proven as efficacious as the autogenous. Vaccines alone, however, while of considerable benefit, both to the local and abdominal lesions, are not sufficient to produce a cure, and, of course, anatomical changes, resulting in obstruction from peptic ulcer or kinks from adhesions about a chronically-inflamed appendix or gall-bladder, require suitable operation.

Conclusions.

The conclusions to be derived from a study of the facts presented, are as follows:

I. The importance of infections of the mouth, nose and throat in the etiology of infections of the gastro-intestinal tract has been definitely established.

II. The treatment of infective lesions of the gastro-intestinal tract must be modified to take cognizance of this newer knowledge, and should include the following:

1. The use of autogenous vaccines made from infective material obtained from any accessible foci of infection.
2. Removal of infective foci as early as possible, preferably before the institution of any other line of treatment.
3. Adequate medical treatment, including diet, hygiene and the correction of errors in posture and other deformities.
4. Suitable operation wherever indicated.

III. As a prophylactic measure, prompt attention should be paid to all mouth, nose and throat infections, as soon as these are discovered.

(For discussion see p. 126.)

THE BIOLOGIC FACTOR IN DISEASE.

Bert B. Stroud, D.Sc.,*

Brooklyn-New York.

WHAT is disease? Is disease a distinct entity—an invariably fixed known quantity, always the same? Or is disease a condition that results when there is a deviation from the normal functioning of working-cells?

Observations made during the past five years, at the Long Island State Hospital, Brooklyn, N. Y., upon patients who exhibited all stages of mental and physical deterioration, together with the gross and microscopic examinations incident to 216 necropsies and the examination of nearly 5,000 specimens of urine have convinced the writer that disease is the result of disordered physiology. This view will account for the observed variations in the manifestations of disease in different individuals.

One important problem to be solved is—what are the demonstrable causes for disordered physiology?

Virchow[1] taught—"The cell is the seat of action." "It is the ultimate morphologic element in which there is any manifestation of life."

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* Assistant to the Pathologist, Long Island State Hospital, Brooklyn, N. Y.

[1] CELLULAR PATHOLOGY, Rudolf Virchow. Translation by Frank Chance, Philadelphia, 1863.

Therefore, in searching for the causes of disease, why should we not consider all those factors which are able to induce a deviation from the normal functioning of cells? A disturbance in one organ has an influence (reflex) upon most of the other organs of the body.

There is an abundance of evidence to prove that many diseases are caused by parasitic germs. Consequently the study of disease as a biologic phenomenon offers a very promising field for investigation.

Mode of Infection.—Infections occur *directly* through lacerations or abrasions of the skin or mucosa and *indirectly* through microscopic lesions in mucous membranes, especially in the walls of the simple crypts, or glands of Lieberkühn. For example, a variety of micro-parasites—bacteria, fungi and protozoa—burrow within these crypts. Here they are protected from the action of local antiseptics. The organisms multiply within the crypts. Some of them produce proteolytic ferments which loosen and digest the epithelial cells that line the crypts. In this manner, microscopic defects in the mucosa are produced and the germs enter the lymph channels in and under the mucous membrane to produce "catarrhal inflammations" of mucous membranes.

Some of the germs enter the lymph and blood streams to asphyxiate, poison, paralyze and digest working-cells in other parts of the body, and so, lesions are produced.

It is more important to determine the cause of a lesion than to select a name for it. Let the diagnosis benefit the patient. The autopsy can not help him.

Biologic Diseases.—As is well known certain specific germs produce characteristic conditions which are known as particular diseases, *e. g.,* typhoid fever, diphtheria, pneumonia, tuberculosis, syphilis, gonorrhea, malaria, amebic dysentery, acute dysentery, cholera, bubonic plague, anthrax, actinomycosis, glanders, tetanus, meningitis, leprosy, erysipelas, septicaemia, pyaemia. But in each case there is a systemic disturbance plus the special symptoms that characterize the "disease."

Sufficient perseverance in making cultures will demonstrate pathogenic microörganisms that do not produce pus, *i. e.,* bacteria, low fungi and protozoa, in the fluids, excretions and tissues of persons suffering from camplaints that are frequently called "obscure in their origin." And it will be found that while some of these organisms have been observed for years, their true significance and power to cause injury have, as yet, not been recognized. And now, the important question to be answered is—*What are these germs doing to the patient?*

We can form an opinion as to what the germs are doing to the patient by

1. Isolating the germs and observing their behavior upon nutrient media.
2. By determining their chemic and biologic products, and
3. Also the effect produced upon experimental animals by injecting them with pure cultures of the living germs.

Microbian Products.—In general, microörganisms produce both chemic and biologic substances, either as a result of their own metabolism or from the decomposition of their nutrient medium. Of course, all germs do not produce the same substances, but in mixed infections, which are common, there will be produced a variety of substances which may cause serious harm to the animal body. Among the common substances produced by germs are, *viz.:*

Chemic Substances.—Acids, hydrogen sulfid, carbon dioxid, indol, phenol, reducing substances, alkaloids, alkaloidal substances and probably other chemicals as yet unknown. Some germs produce tenacious mucoid material of unknown composition.

Biologic Substances.—Toxins, enzyms, proteolytic ferments.

Significance of Microbian Products.—Chemistry and physiology inform us what the chemic and biologic substances produced by germs may be expected to do to the tissues of the host, *viz.:*

Acids tend to decrease the alkalinity of the blood and therefore retard the elimination of carbon dioxid.

Hydrogen sulfid is a poisonous reducing and sulfurizing agent. It reduces oxyhemoglobin and consumes oxygen. The nascent sulfur combines firmly with hemoglobin, thus displacing oxygen and preventing that portion of hemoglobin from again combining with more oxygen. The oxygen carrying power of the blood is impaired and a partial oxygen starvation results. Death is due to paralysis of the nerve centers, Vaughn.[1]

Reducing substances consume oxygen and in this manner rob the tissues of oxygen. Working-cells are more or less asphyxiated and normal metabolic oxidation is hindered.

Indol is a nerve, brain and muscle poison. Excessive amounts cause headache, confusion, flight of ideas followed by mental depression and rapid muscular fatigue, Herter.[2]

Phenol is a muscle poison. If the amount is sufficient, it depresses and paralyzes, Herter.[2]

Albumose (*Proteose*) reduces arterial pressure and causes a marked febrile reaction, Buchner and Geret.[3]

The injection of peptones and proteoses into experimental animals causes a febrile reaction, increased formation of connective tissue, toxic symptoms and even death, Wells.[4]

Protcölytic Ferment.—In digestion experiments, as carried out in the laboratory, coagulated albumin, fibrin, bits of muscle, etc., first become swollen, translucent and then partially or entirely dissolve with the formation of peptone and intermediate products.

The appearance of proteid material undergoing artificial digestion suggests very strongly, cloudy swelling and parenchymatous degeneration as they appear in sections of pathologic tissues.

The writer considers that cloudy swelling and parenchymatous degeneration are caused by the digestive action of proteolytic ferments produced by parasitic germs somewhere in the body; and that the soluble products of this "tissue-digestion" and microbian toxins enter the circulation to irritate (perhaps paralyze) other cells and to cause a diminished arterial tension, increased formation of connective tissue, a febrile temperature, toxic symptoms or even death as described in the classic experiments of Buchner and Geret and Wells, *V. supra.*

This view is supported by the fact that proteolytic ferments produced by germs digest (liquefy) gelatin, coagulated blood serum and milk with the formation of peptone.

We would naturally expect that cells rich in protoplasm which have been disabled—irritated, exhausted, asphyxiated by reducing sub-

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1. INTOXICATIONS, American Text-Book of Pathology, Philadelphia, 1902.
2. The Common Bacterial Infections of the Intestinal Tract. New York, 1907.
3. Münch. Med. Wochenschrift, 1901, (48), 1163.
4. Chemical Pathology, Philadelphia, 1907.

stances, blood poor in oxygen or by enfeebled circulation or parlyzed by toxins would be less able to resist the action of digestive enzymes that may be present in the circulation.

SUMMARY

Disease is a biologic phenomenon—the reaction of the animal body to injury caused by parasitic microörganisms. Of these there is a great variety—bacteria, fungi, protozoa and minute worms. Many of them do not cause the formation of pus, but they do produce toxins, chemic and biologic substances that irritate, asphyxiate, poison, paralyze and digest the body's working-cells. And when a sufficient number of important cells are put "out of commission" death must result.

Germs enter the tissues directly through wounds and abrasions of the skin and mucosae. Some germs enter the lymph and blood indirectly through microscopic lesions, which they themselves produce in mucous membranes—in the walls of the crypts and glands of Lieberkühn. Unless the germs are destroyed by phagocytes and parasiticidal substances, they will multiply and be carried in the blood stream to poison, paralyze and digest cells rich in protoplasm, in distant parts of the body. In this manner lesions of degeneration are produced with a resultant impairment of function.

Symptoms will depend upon what tissues are attacked and the extent to which they are disabled. Functional disorders are danger signals—warnings of possible, more serious troubles that may develop later on.

Indeed, disease is the result of a conflict between different varieties of living protoplasm—the host and the parasitic invaders. Each kind of protoplasm is fighting for its own existence; combatting the other with all its natural powers—each is striving to digest the other. Truly life is a fight from the beginning to the end, and the best fighter will live the longest.

In order to combat disease in the most rational manner we must master the "alphabet," *i. e.*, the important elements of biology, physiology and pathology.

TREATMENT OF DEAFNESS.*

William C. Braislin, M.D.,
Brooklyn-New York.

IN the very few minutes at my disposal to discuss, at the request of our Chairman, the treatment of deafness, I shall limit myself to but one phase of this broad subject; namely, its most intractable form, usually designated as otosclerosis.

What can we do for it? It has doubtless happened to every one here that a diagnosis of otosclerosis determined by all our known tests has been made and yet the progress toward a supposedly inevitably profound deafness has been stayed or has been postponed for years. In the attempt to stay the progress of this disease all our effort of a local nature must be expended in limiting the progress of any coincident disease of the middle-ear, in placing and in keeping eustachian tube, pharynx and nose as nearly in perfectly normal condition as possible. No known remedy or operative treatment of the tympanic cavity proper is of the least avail for the relief of the diseased bony capsule surrounding the labyrinth, so far as we know at the present time. The regulation of the conduct of life of the individual is most important, and for this purpose as well as for testing out the hearing, and for the application of possibly beneficial local treatment, such patients should report every three months. The question of giving these persons the use of the acousticon or audiphone, if only for occasional use, is to be considered. Not infrequently such an individual may be sent to a teacher of lip-reading with great benefit. The chief benefit to my mind to be derived from a knowledge of, or ability to appreciate, lip-reading, is the added confidence which the patient acquires by this knowledge. The diffident person with a considerable degree of deafness tends to withdraw from society, to shun the company even of intimates. Such an attitude must be overcome by the expenditure of any degree of effort. Otherwise this person becomes a depressed, melancholic individual, whose life is obsessed by the belief that she is a burden to herself (or himself) and to her family and acquaintances. We constantly note how young persons, especially, readily acquire an unconscious knowledge of lip-reading. This should be encouraged, as must also every opportunity to exercise their hearing function. It is better for them to guess incorrectly at what is being said than not to guess at all. Their wits at least are thus put to work and the mental attitude of striving to correlate what little they can hear into connected sentences is beneficial. Added to this mental attitude, a knowledge of lip-reading is of great assistance.

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* Title assigned to writer for discussion at the meeting of the Section on Laryngology, Rhinology and Otology, Medical Soc. County of Kings, Jan. 20, 1916.

Most of these cases are prone to discouragement; and I have long believed that many cases are badly treated by a too frank and unnecessarily hopeless prognosis. Lip-reading is not beyond the possibility of acquisition even by elderly persons, and I believe this should be thought of early, before the case has hopelessly progressed, in all cases of young persons. We must bear in mind that these are the patients who often get encouragement only from advertisers of artificial ear-drums and of instruments constructed on wrong principles or unskillfully applied. I strongly insist that it is our duty to exercise the greatest care to ascertain any errors of hygiene and to advise them as to the avoidance of excesses both in work and play; also as to the use of tobacco and alcohol, and to aid them to the best of our ability to the betterment of their condition.

As to the patients who apply at our public ear clinics suffering from an incurable or possibly progressive deafness, I wish again to point out the advantages which a knowledge of lip-reading may make in their social condition. It may mean to them the difference between the ability to obtain and to hold a working position or that of having to accept dependency from their families or the public.

Fortunately at the present time we have a department of the public school service in Brooklyn, for instruction of lip-reading, at the corner of Bridge and Tillary Streets, under the care of a competent and enthusiastic teacher, Miss Mary Woodrow, who would welcome your patients. This is a night school, and both young, adults and even those of advanced years are welcome.

The partially deaf must have explained to them why it is advisable for them to take up the study of lip-reading. Many are diffident. By having them return frequently to the clinic the doctor may spur on their interest and prevent their ceasing to attend, after one or two lessons, from discouragement. I think our duty to these patients is not entirely completed by turning them over to the school. They should report rather frequently at first, partly in order to see that they are not leaving off this study and also in order that we may supervise the physical conditions of the ears.

In cases of otosclerosis complicated by chronic catarrhal lesions of the pharynx, eustachian tube or tympanic cavity, treatment should be continued with shorter or longer intermissions.

While any obstruction exists in the eustachian tube, either from congestion, hyperplasia or cicatricial stenosis, I am strongly of the opinion that progressive changes of a harmful nature are proceeding in the tympanic cavity independently of the otosclerosis. Therefore I am convinced that no part of the auditory area is so fruitful in results to the patient in return for the effort expended as here. In hypertrophic states of the membrane repeated applications of nitrate of silver about the mouth of the tube, and in many cases carried within it, give good results. In cicatricial conditions of the tube, sounds and bougies must also be employed. Curetting away adhesions and fibrous bands from about the mouth of the tube, or the removal of masses of hypertrophied lymphoid tissues by special forceps or by curetting, when, with the aid of the pharyngoscope or by the finger carried into the pharynx, we are able to demonstrate them, are likewise measures of decided value.

LIP EXPRESSION READING AS AN AID TO THE DEAF.

Mary Woodrow.

Brooklyn-New York.

THE art of reading the lips and expression of the face is not new. It is known there was a method taught by a Spanish monk in 1500. In Holland, England and Germany successively, improvements were made on the old Spanish method; but all were for the congenitally deaf. Only in the last century has the teaching of *speech* to the deaf become general in the institutions and this brought up the question of teaching lip-reading to those who had become deaf after they had acquired speech and a vocabulary.

The results in this direction have been wonderful. There exists a prejudice which in the interest of the cause is to be regretted. There is the fear that in using the eyes the ears may lose the ability to hear through the lack of exercise. This is a mistake, for the labor of the eye in lip-reading gives ease and rest to the ear and relieves it of the constant strain of trying to hear.

Then again many feel that lip-reading may only be acquired in youth. This again is false, for pupils of varying ages and different degrees of education have acquired in my classes the ability to understand a natural and freely flowing conversation and in the same time as the young people. Lip-reading is in every way a help and never a hindrance. Many of the Aurists have been skeptical about it. Fifteen years ago I had a class in Boston, in fact established a branch there for a New York school and the two men of all I met who were most interested and sent me pupils were Dr. Jack and Dr. C. Blake.

Miss Bruhn, a member of that same Boston class and a teacher of German and French in the Boston schools, heard of a method being taught by a Prof. Müller-Walle in Berlin and forthwith started to try it out. She wrote me, "I enjoyed *your* lessons and learned much but this is a better method, a more scientific method than yours." So we have changed places, she has been the teacher and I the pupil.

Miss Bruhn has translated and adapted the Müller-Walle Method to the English language, has a prosperous school in Boston and authorized teachers of her method in all the large cities of the United States. She writes me: "The Aurists everywhere are beginning to see the value of lip-reading. Dr. Clarence Blake is so much interested in my school that he came last Friday and gave an address to fifty of my pupils."

So Dr. Blake is still interested and says of Miss Bruhn's book which I use, "It is a clever, concise exposition of a method of speech-reading which both identifies the *form* of the spoken word and emphasizes the value of the *transitional movement* of the fluent speech. In its arrangement and clarity and in all respects it is to be commended for the fulfillment of its purpose." The method gives in the first lesson five vowel sounds, Italian A (ah), long O, long oo, and long E. These vowels are practiced until easily recognized.

For the Italian A (ah) there is the downward movement of the lower jaw. For O a forward movement of the lips, for Ē a backward movement of the lips, and so on.

Then six consonants, their positions and movements are shown and immediately combined in practice with the vowels. Fah, Fo, For, Mah, Mo, Moo.

In this syllable drill, which is the foundation of this method, sense is not thought of, sound alone is looked for, but no syllable is practiced that is not used in speech. The eye is trained to see what would pass unnoticed by a hearing person. Like most things, lip-reading is more simple in practice than it appears in description. The difficulties are not great.

The time the pupil requires for methodical instruction with a teacher is short as compared with, for instance, languages, music or painting. There are difficulties, but every prize must be fought for and here we have a prize of no mean value.

The study itself gives a new impetus, as it aims toward self-help. This is a momentous word. Self-help! Independence! The opportunity to participate in the general mirth, to be cheerful among the cheery! To take his or her place in the world! When I am tempted to apologize for talking too much on this subject I recall the lines from the Talmud:

"He that knows anything worth communicating and does not communicate it let him be hanged by the neck."

PRESIDENTIAL ADDRESS.

Dudley D. Roberts, M.D.

Brooklyn-New York.

IT has, for many years, been the custom for the President of the Associated Physicians of Long Island to deliver an address at the Spring Meeting. It seems that such an address would be better made in this way and at this time, in order that plans for the ensuing year shall reach all members at an early date. Each administration makes innovations, some of which become custom. This innovation is made in the hope of insuring your co-operation in carrying out plans which have been made for the year.

It is with the greatest pleasure that I take up the duties of President of the Associated Physicians, because it means more to me than any medical society of which I am a member. In a large part this feeling is due to my devotion to the whole of Long Island and its interests. Very many of our Island men have comparatively little knowledge of affairs of Brooklyn, and to many of the Brooklyn men the Island is an unknown territory, except for the meetings which are held at various places. But to those of us who winter in the city and summer on the Island, who have shot and fished all its waters, and played on its wonderful golf courses from Bayside to East Hampton, it is all home. It means not only work, but recreation. I am quite sure that my devotion to the society is due in some part to the fact that through a period of years I have been permitted some share in its active work. The thing we work for certainly makes the strongest appeal.

The membership of our organization is now nine hundred and twenty-five, including practically all of the profession on the Island, and a generous proportion of those in the city. But it is obvious that the success of such a society depends entirely on the number of members who value it sufficiently to make some personal sacrifice for its welfare. While we must, in the main, look to the activities of the Membership Committee for accessions to our number, each one of us can help by personal solicitation among friends. No less important is that thing which no committee alone can do—to urge attendance of friends and acquaintances at meetings, and at these meetings make the effort to see that every one feels that the time is being well spent. I can think of nothing this Association stands for more than the fraternity spirit. We meet many of our associates whom we unfortunately do not see elsewhere. The social side has always been encouraged to a marked degree by clam-bakes and "duck on the rock," but we can stand a great deal more of this comradery at the other meetings. We certainly cannot do much for the advancement of the science of medicine at the few meetings held each year, but we can take the trouble to get the other fellow's point of view, recognize kindred interests, and broaden our circle of friends. We should look upon it as a duty to see that every man we know, especially the younger men, are made acquainted as generally as possible. If this is not accomplished under such delightful auspices, I would look upon the organization as failing in one of its chief functions.

So far as the meeting places are concerned, we have after considerable deliberation reached the following decisions:

The Spring Meeting is to be held on June 17th or 24th, at Westhampton Beach. We hope to be assured of a sufficient attendance to justify a special train going and returning. It is some years since a meeting has been held in this vicinity, and the number of physicians practising in the neighborhood, or making it their summer home, assures us a hearty welcome. Such a variety of amusement is to be found here that there can be no doubt of a good time. It has seemed best to forego the pretense of a scientific session at the Spring Meeting, when everything militates against its success, and substitute an address after the dinner on some subject related not too intimately with the practice of medicine.

The Fall Meeting we hope to hold at Long Beach on October 14th. The dinner, and possibly the program, will be arranged to express our appreciation of the personality, attainments and services to the Associated Physicians of the first president and always active member, Dr. William Browning. Plans are already afoot to make the occasion memorable, and I am sure it needs no words of mine to insure hearty co-operation in this undertaking.

The Mid-winter Meeting, in our opinion, should resolve itself into a clinical meeting, and we purpose holding it at one of the hospitals in the city, where the facilities for such a gathering are available. In order to secure the attendance of as large a proportion of the Island men as possible, we have considered the advisability of having a midday luncheon in place of a dinner, as has been the custom. We have no doubt as to the success of the clinical meeting scheme, but we should be very glad to have expressions of opinion as to the desirability of making the change to a mid-day luncheon, so that the session would be over in the afternoon.

The following committees have been appointed for the ensuing year. Some committees have been asked to serve again because of their familiarity with their duties, but in the main it has seemed best to bring as many new members in to the active work of the society as possible.

Entertainment Committee: Dr. Frederick C. Holden, Chairman; Dr. Nathan T. Beers, Dr. N. S. Wadhams, Dr. E. Rodney Fiske, Dr. Jacques Rushmore, Dr. Hugh Halsey.

Scientific Committee: Dr. H. A. Houghton, Chairman; Dr. H. Beeckman Delatour, Dr. William Lohman, Dr. Luther Warren.

Membership Committee: Dr. Royale H. Fowler, Chairman; Dr. J. F. Ranken, Dr. William Woolsey, Dr. M. M. Kitell, Dr. W. M. Stone.

Publication Committee: Dr. W. H. Ross, Chairman; Dr. E. S. Moore, Dr. J. M. Winfield, Dr. F. T. DeLano, Dr. H. G. Webster, Dr. J. C. Hancock.

Historical Committee: Dr. William Schroeder, Chairman; Dr. Calvin F. Barber, Dr. Cornelius O'Leary, Dr. H. P. deForest.

Legal Committee: Dr. William E. Butler, Chairman; Dr. J. Sherman Wight, Dr. Thurston H. Dexter, Dr. John G. Williams.

Humanics Committee: Dr. William B. Brinsmade, Chairman; Dr. W. B. Savage, Dr. J. W. Fleming, Dr. Thomas R. French, Dr. G. H. Turrell.

Public Health Committee: Dr. Arthur Jacques, Chairman; Dr. Guy F. Cleghorn, Dr. Frederick McCrea, Dr. W. B. Gibson, Dr. E. H. Bartley, Dr. Frank Overton, Dr. A. C. Jacobson.

Suggestions will be welcomed by these committees at all times. The other officers of the society want advice and criticism of plans but they anticipate a degree of co-operation from each member that alone can insure a year of unprecedented success.

THE ASSOCIATED PHYSICIANS OF LONG ISLAND.

THE Eighteenth Annual (Fifty-fourth Stated) Meeting of the Associated Physicians of Long Island was held at the Library Building of the Medical Society of the County of Kings, Saturday, January 29th, 1916. The President, Doctor Guy H. Turrell, presided, and there were one hundred and twenty-five guests and members present. The reading of the minutes of the October meeting was dispensed with as they had been published in the Long Island Medical Journal.

The Membership Committee presented the following names for membership:

Ralph William Hall, Stoney Brook, L.I.C.H. 1911. Proposed by Guy H. Turrell.

Charles Edward Panoff, 1924 Prospect Place, Brooklyn, L.I.C.H. 1903. Proposed by Lefferts A. McClelland.

Thomas B. Wood, 155 Herkimer Street, Brooklyn, Cornell 1911.

William H. Jessup, Cornwell Avenue, Hollis, Buffalo 1900. Proposed by James Cole Hancock.

The above names were favorably acted upon by the Society and were ordered added to the roster.

The following report of the Historical Committee was prepared by the chairman, Doctor William Schroeder. This report was ordered accepted and placed on file.

ANNUAL REPORT OF THE HISTORICAL COMMITTEE, 1915.

The report herewith presented would indicate that the death rate among our members during the year 1915 is larger than in former years; the names indicate that they have all been active members of our profession, respected in the community in which they lived, and an honor to the profession of medicine of which they were a part. In token of respect to their memory we herewith record their names:

Date of membership.		Date of death.
1911-1915	Charles William Brunner, Ph.D., M.D.,	Jan. 21, 1915
1914-1915	Andrew Dickson Packer, A.B., M.D.	Feb. 1, 1915
1911-1915	Charles Osborn Tupper, M.D.	Feb. 22, 1915
1901-1915	Charles Eugene Lack, M.D.	Feb. 26, 1915
1902-1915	Stuart Henry Benton, M.D.	Mar. 2, 1915
1913-1915	Samuel Henry Rabuck, M.D.	Mar. 3, 1915
1900-1915	Joseph Francis Bloodgood, M.D.	Mar. 12, 1915
1899-1915	Philip M. Wood, M.D.	Mar. 27, 1915
1906-1915	Willis Henri Philleo, M.D.	Apr. 11, 1915
1909-1915	George Prosser Griffing, M.D.	May 5, 1915
1909-1915	Henry Otto Hoffman, M.D.	June 24, 1915
1909-1915	Joseph Meyer, M.D.	Aug. 15, 1915
1898-1915	John Evans Sheppard, M.D.	Sept. 13, 1915
1900-1915	P. Van Benschoten Fowler, M.D.	Sept. 14, 1915
1899-1915	Erasmus Darwin Skinner, M.D.	Sept. 21, 1915
1900-1915	John Tyndall Gibbon, M.D.	Oct. 2, 1915
1912-1915	Kenneth Frank Junor, M.D.	Sept. 26, 1915
1900-1915	George Richard Montgomery Kuhn, Ph.G., M.D.	Nov. 5, 1915

During the year 1915 the names of 82 physicians were presented for membership in our Association; they represent the following Universities and Medical Colleges:

University & Bellevue	7	
“ of Baltimore	1	
“ “ Louisville	1	
“ “ Cornell	8	
“ “ Vermont	1	
“ “ Syracuse	3	
“ “ Yale	1	
“ “ Munich	1	
“ “ McGill	1	
“ “ Queens	1	
	—	25
College Physicians & Surgeons N. Y.	21	
Long Island College Hospital	27	
Medico Chirurgical, Phila., Pa.	1	
Jefferson Medical College	2	
College Physicians & Surg., Baltimore	1	
Albany Medical College	1	
N. Y. Eclectic Med. Col.	3	
N. Y. Homoeopathic Med. Col.	1	
	—	57
Total		82

During the year the Long Island Medical Journal has published short notices of our deceased members, and as usual I feel under obligation to the Secretary of our Association, for the interest he has at all times manifested in behalf of the Historical Committee, for which at this time in behalf of the Committee it is but just and proper to say I thank you.

My relations with the officers and members of the Associated Physicians of Long Island during the year have been pleasant in every particular and hope that feeling of good fellowship will continue in the future.

(Signed) WILLIAM SCHROEDER, M.D.,
Chairman of the Historical Committee.

December, 1915.

Doctor Arthur D. Jaques, Chairman, presented the following report from the Committee on Public Health. This report was ordered accepted and placed on file:

REPORT OF PUBLIC HEALTH COMMITTEE.

Your chairman has been active as chairman of the Nassau Suffolk Mosquito Elimination Committee in framing legislation to be shortly introduced into the State Legislature. The executive secretary, Mr. H. B. Maurier, has been in conference with the Bill drafting committee and on Jan. 16, a conference was held at the home of Assemblyman McWhinney at Cedarhurst, there being present: Mr. Maurier, Mr. C. C. Adams, representing the Rockaway Peninsula Committee and myself.

As a result of this conference the following suggestions were made as an outline for the proposed legislation:

1st. The bill to be introduced to apply as drawn to one county and to be amended later to include as many counties as may wish through their representatives to be included in the measure.

2d. Power is to be vested in a commission to be appointed by the

Governor—five from the county, Chairman of Board of Supervision of the County and the Sanitary Supervisor of the district in which such county is located.

3d. The commissioner to have power to eliminate all breeding places of mosquitoes wherever found. To be without salary. To be allowed actual expenses of attending to business of commission. To hold office one, two and three years, as appointed by the Governor. To employ all necessary engineers and help to do the actual work of surveys and drainage and to make annual reports of proceedings to the State Commissioner of Health and to the Supervisor of the county.

4th. The cost of elimination work is to be a charge on the county and is to be included in the annual budget and collected with the taxes.

5th. The present health laws are not to be changed and are understood to be amended by this act: but this act is intended to be enforced in conjunction with the existing laws.

6th. A temporary provision is included for 1916 whereby work of elimination can be done this year.

A circular for distribution is presented.

(Signed) A. D. Jaques,
Chairman.

Doctor William B. Brinsmade, Chairman of the Committee on Humanics presented the following report. It was moved by Doctor William J. Cruikshank that the Report of the Committee on Humanics be accepted and that its recommendations be adopted. After discussion by Doctors William B. Savage, Henry G. Webster and James P. Warbasse this motion, having been seconded, was passed by the Society:

The Report of the Committee on Humanics.

Preparedness.

On the 4th of August, 1914, Earl Grey made the following announcement in the House of Commons: "His Majesty's Government has received from Germany a communication regarding the Neutrality of Belgium and making a proposition which His Majesty's Government is unable to accept. A reply has been sent, an answer to which must be received tonight, at twelve o'clock." This event marked the beginning of the greatest set back to civilization the world has yet known. It proved conclusively that treaties between nations are of no binding force—that any weak and undefended country may be the prey of a more powerful country.

The devastation and ruin remaining after the maurauding Hun, has left whole districts in Poland without a living human being under eight years of age. This has been followed by increasing demands for money until Belgium's credit is almost taxed out of existence. American citizens in the lawful pursuit of their business have been foully murdered on land and sea. This nation sits complacently by, while accredited diplomats from another country plot against the lives and property of our citizens within our own borders—saying to itself "Am I my brother's keeper?"

The fool never learns.

The average man learns from his own experience.

The wise man learns from the experience of others.

Therefore be it resolved; First: That it is the sense of this Association that the situation arising from the European war places this country in a position where it may expect in the none too distant future belligerent aggression on the part of one or more of the now contending countries. That however the issue may be decided in Europe, there is no guarantee that this country may not sooner or later become involved in controversies which will lead to war. The best insurance against such aggression is immediate national preparation for defense.

SECOND: That as a Society and as members of the Medical Profession, we should take active steps in behalf of military preparedness against any aggression.

THIRD: That every member of this Society should become directly connected with some organization designed for and active in matters of national defense.

FOURTH: That the members of the Society shall advocate this cause whenever an opportunity presents itself, to other members of the Medical Profession and to their patients.

FIFTH: That efforts be made to the end that this matter of preparedness shall be brought to the attention of the large Medical Societies, both City, County, State and National, with the object that the Medical Profession shall be able and ready to contribute its full share of activity when called upon to do so.

SIXTH: That the principles of military discipline and training, not only in the interest of military preparedness, but likewise for the benefits to be derived in the disciplinary education of the individual, shall be introduced in the public schools of the country as well as in all the large private educational institutions including preparatory schools, colleges and technical schools. This training may be introduced into the curriculum not only to the distinct physical advantage of the individual but for his benefit in the entire matter of discipline.

SEVENTH: That a course in military hygiene, military hospital management, military surgery and medicine, be required as a part of the curriculum of all Medical Schools in the country so that medical students would acquire as a part of their training the discipline and knowledge necessary for the medical man in field or base hospital service during the war. The Council of Long Island College Hospital has already recommended a required course in military surgery.

It is also advised that encampments during the summer months for medical students should be a requisite part of the curriculum and that these encampments would afford opportunity for training in camp hygiene, military discipline and other matters of foremost importance to the medical man doing active service in war time.

EIGHTH: That a Committee be appointed to consider the ways and means by which one or more medical units might be organized on Long Island and in the Borough of Brooklyn, these units to be conducted under Government supervision, and controlled, equipped, prepared and trained to take the field with the purpose of organizing and maintaining a military hospital whenever and wherever it may be dispatched by order of the Government. To this end action should be set on foot to secure the needed supervision from the Federal Government.

NINTH: That, as a matter of principle and policy, we advocate a material increase in the standing army of the United States and likewise of the navy.

TENTH: That compulsory military service or militia training of the type now in force in Switzerland, shall be exacted of every American citizen.

ELEVENTH: That such Resolutions as are adopted by the Associated Physicians of Long Island shall be printed and that a copy of these resolutions be sent to the President of the United States, Secretary of War, the Secretary of the Navy and to the Congressmen and Senators of New York and further, that a Committee be appointed to call upon the Congressman of this Congressional district to lay before him the resolutions adopted by the Association and by personal interview to impress upon him the sentiment of this Association.

(Signed) WILLIAM B. BRINSMADE,
Chairman, Brooklyn.
THOMAS R. FRENCH,
Brooklyn.
BURDGE P. McLEAN,
Huntington.
BRONISLAW ONUF,
Amityville.

The Report of the Publication Committee was presented by Doctor William H. Ross, Chairman, and was ordered accepted and filed, with the thanks of the Society to the Committee for its fruitful labors:

REPORT OF THE PUBLICATION COMMITTEE OF THE LONG ISLAND MEDICAL JOURNAL.

Your Publication Committee for the year 1915 offers the following report:

We think that you will agree with us that the Journal has gained in quality in the last year. In fact, you will doubtless agree with us that the Journal has grown steadily, for years, toward filling its place in modern medicine.

Material for publication is coming in more freely than ever before and it is not hard work now to fill the space with selected articles.

Last May, the printing of the Journal was placed in the hands of the Arthur H. Crist Co., Cooperstown, N. Y., and at a considerable saving in cost of printing, an average of about $100.00 per month. Dr. Burton Harris who has so ably edited the column of Notes and News for a long time, has found it necessary to retire from the subeditorship because of pressure of other work. Dr. Charles E. Schofield has been appointed in his place.

The finances of the Journal are at last in good condition. For ten years it has been a struggle, and often its closest friends were filled with doubt as to whether it ever would be made to pay its way. For the first year in its history, the Journal has paid its way, not only paid its way but returns to the Association some money. The receipts from the advertising this year are $4,363.90. This is a gain over last year of $460.90. The advertising has grown in the last four years from $2,579.00 to $4,363.90. The cost of the Journal this year is $4,160.00—$1,633.00 less than last year.

The net cost of the Journal for 1912 was $1,780.00; for 1913 was $1,901.00; for 1914, $1,860.00 and for 1915, it shows a surplus of $203.30. Your committee thinks this is "going some." We are pardonably proud to render this account of our stewardship.

This result, which is a change of $2,063.30 in one year, has come about because of the splendid work of the Editor and the donating of his labor for one year, and also, is due to the change in printers. This again is due more to the Editor than to anyone else. He found the firm that could do it as well and at less cost.

The first decade of the life of the Journal is finished. It now rests on a solid financial foundation. The work of future committees will be easy in comparison. Theirs is only the duty of perfection and expansion.

Your committee retires with a feeling that their work is now finished. We hope that there will be no difficulty in finding willing men to carry it on; men who will cherish it and make it the object of personal solicitude and not rest until it is one of the leading Medical Journals of this country.

Respectfully submitted,
(Signed) THE PUBLICATION COMMITTEE.

The Secretary presented the following report:

SECRETARY'S REPORT.

Mr. President: Your Secretary has to report that the usual meetings have been held during the past year and that they have been well attended. The membership at the present time is as follows: Nine honorary members, and nine hundred and fifteen active members, making a total of nine hundred and twenty-four. Of the active members two hundred and twenty-seven reside in Queens, Nassau and Suffolk Counties and six hundred and eighty-eight in Kings County. Fifty-five new names were added to the roster. There were nineteen deaths and twelve resignations.

Respectfully submitted,
(Signed) JAMES COLE HANCOCK,
Secretary.

The Treasurer presented the following most satisfactory report:

TREASURER'S REPORT.

Associated Physicians of Long Island.

Treasurer, Edwin S. Moore, M.D.

Jan. 1, 1915 to Jan. 1, 1916.

Balance on hand Jan. 1, 1915	$ 35.85
Received from dues Jan. 1, 1915 to Jan. 1, 1916	1,133.00
" " advertisements	4,363.90
" " Dinner Fund	327.00
" " Note	398.00
	$6,257.75

Expenditures

Brooklyn Daily Eagle	$1,469.49
Miller & Wright Co.	376.65
Vernon & Co.	26.00
Crippas & Co.	46.00
Crist & Co.	1,066.44
Bal. last year's salaries	408.34
National Mercantile Agency, Commission	22.87
Commission	26.25
N. D. Webster	945.00
E. W. Whitfield, plates	51.30
H. G. Webster, Petty Cash	63.18
Postage, Treasurer	28.11
Sec't'y Printing	111.20
Hunter Collins & Co.	97.50

Dr. Judd, Postage	15.00
Postage, Journal	57.40
Postage Deposit, Cooperstown	8.00
Stenographer	520.00
Dinners	319.75
Kings Co. Med.	12.00
Returned dues	2.00
Discount and Notes	423.56
Long, Printer	15.50
Turner and Wild	7.50
	$6,119.04
Balance on hand Jan., 1916	138.71
	$6,257.75

The report of the Auditing Committee, Doctors Walter A. Sherwood, William H. Aten and Charles Eastmond, was ordered accepted and the Committee discharged with thanks. All transactions found correct.

It was moved by Doctor William Browning, seconded and carried; That all resignations, received at any time, should be referred to the Board of Directors for action and not be brought before the general Society.

Doctor H. B. Delatour presented the Report of the Nominating Committee, as follows:

For President, Dudley D. Roberts, Brooklyn.
For First Vice-President, J. Carl Schmuck, Lawrence.
For Second Vice-President, Lefferts A. McClelland, Brooklyn.
For Third Vice-President, William A. Hulse, Bay Shore.
For Secretary, James Cole Hancock, Brooklyn.
For Treasurer, Edwin S. Moore, Bay Shore.

There being no nominations from the floor the Society elected the above to act as officers for the year 1916.

The Scientific Session was directed by the President who first introduced Doctor Richard Derby of New York City who read an interesting paper upon "Modern War Surgery." The second paper was presented by Doctor Joseph C. Bloodgood of Baltimore and was entitled "New Problems in the Diagnosis and Treatment of Lesions Within the Abdomen." This paper was accompanied by an exhibition of lantern slides. The third and last paper was presented by Doctor Glentworth R. Butler, of Brooklyn, and was entitled "The Comparative Value of the Cardiac Stimulants." All of the papers received the interested attention which they fully deserved from the unusually large audience.

The dinner at the Hotel Bossert was a good one and the arrangements made by Doctor Lefferts A. McClelland, Chairman of the Entertainment Committee, resulted in a most enjoyable evening to eighty-six guests and members who attended. The music furnished was of an unusually high order.

At the close of the dinner, Doctor Turrell, with a few well chosen remarks, proposed a standing toast to the new President, Doctor Roberts, who responded with a short address giving an outline of the suggestions he would advance concerning the meetings for the coming year.

(Signed) JAMES COLE HANCOCK,
Secretary.

EDITORIAL

HEALTH INSURANCE.

ON January 25th announcement was made of the introduction by Senator Mills of a bill for compulsory health insurance for workers in New York State. The tentative draft of this bill has been submitted by the Committee on Social Insurance for Labor Legislation. The proposition is one that is of peculiar interest to the medical profession, not only of this state but of the entire Union, as the adoption of the measure by New York State will undoubtedly be followed by the other States in the course of time as its workings become better known and appreciated. Such a step is the inevitable sequence of the Workmen's Compensation Act, which provided for injury only and left the far larger field of disability from sickness untouched. Health insurance for workers was established several years ago in Germany and England and in the latter country was met by a storm of protest on the part of the British Medical Association; but as time passed it was found that a large proportion of practitioners were benefited to an extent that seems largely to have removed the original opposition.

In general, the Bill provides for a fund to be raised from three sources, two-fifths to be paid by compulsory contribution by all workers receiving less than $100 a month, two-fifths by their employers and one-fifth by the State. It is provided that not only shall medical attendance, nursing, medicines and necessary appliances, such as eye glasses and crutches, be supplied to the beneficiary during a period of illness not to exceed twenty-six weeks in any one year, but a cash sick benefit as well, beginning with the fourth day of disability, which shall equal two-thirds of the weekly wages of the insured member. Dependents of the insured shall also receive necessary medical attendance, nursing, etc., and a cash benefit equal to one-third of the wages of an insured member receiving hospital treatment shall be paid to his family or other dependents while he is in the hospital, weekly where possible, and in no case less frequently than semi-monthly. A maternity benefit, in addition to necessary surgical and obstetrical aid, materials and appliances for insured women and the wives of insured men, equal to the regular sick benefit, shall be paid for a period of eight weeks, of which at least six will be subsequent to delivery on condition that the beneficiary abstains from grainful employment during the period of payment. Provision is also made for a funeral benefit up to the sum of $50.00. These benefits shall be received in case of any sickness or accident or for death not covered by the Workman's Compensation Act.

Then the bill provides for the collection and disbursement of benefits, for necessary supervision; for the assimilation of mutual benefit societies which may be already existent and seems to have been most carefully and completely worked out so as to provide adequate medical care for the poor.

Careful investigation of the subject seems to show that the total assessment on an income of $600 a year would mean about $24.00, which would cost employer and employee each 80c a month, and the State 40c.

It does not require argument to prove the contention that the poor man should have as efficient medical care as the wealthy: the foundations of society rest on the poor man and the better his health the better his earning capacity, and the better his earning capacity the less help does he demand from society. Therefore, any step to provide adequate medical attendance is a long step in advance. The provision of the bill limiting such help to those who earn less than $100 a month is, however, an unfortunate necessity as it is just as hard for a man with $110 to meet emergencies. As the workings of the plan are tried by time, it may be found wise to modify this arbitrary figure.

The bill provides medical care, nursing, drugs and surgical appliances, or hospital treatment and a cash benefit. By so doing it creates a favored class that is purely arbitrary and from that standpoint should be criticised, as it gives too much to one class of workers and makes no provision for the better paid men who, by reason of being temporarily unemployed, may need it more. It makes much of medical care but does not provide for the medical care taker. The argument that is most frequently used in favor of health insurance of this type is that the physician who cares for a case under this law is assured of a definite return, whereas in the past he got no return for the same work; and that, therefore, the aggregate of the additional income from this source, which was previously a pure charity or a dead loss, as you choose to look upon it, is a considerable gain to medical practitioners. The gain will be computed by the amount of the insurance fund less the cost of nursing, supplies and administration and the sick benefit, divided by the number of doctors. If the figures work out as do those of the city budget, the actual amount received by some physicians will be a contemptible one, we fear. In computing such services, account must be taken of the actual number of visits given and even if the yearly increase under the act were to equal $800, it would be very poor pay were it to represent work done at the rate of 10 or 15c a visit.

As one looks over the field of medical employment, he cannot help but he struck by the pittances that are paid by corporations to physicians in their employ. For instance, one large manufacturing concern pays a physician $2,000 for what amounts to full time service, inasmuch as he must spend stipulated daily hours at his office in the manufacturing plant and follow up his cases by outside visits as required; and his hours are practically limited only by the working hours of the men. To many a young man beginning practice, $2,000 a year and no expenses except for board, lodging and clothes, seems a bonanza, but figured from the piecework basis, the amount of actual work required in this particular case figures close to 10c a visit. There are some similar positions paying as low as $600 a year, which are eagerly sought for by men beginning practice—yes, and some who should be well established. It seems a popular belief to lump all graduates of medical schools together and regard a doctor's education as completed with the receipt of his degree; but as a certified public accountant differs from an ordinary bookkeeper, so does a progressive graduate of twenty years' standing differ from the graduate of last Spring, and any attempt to fix a lump sum remuneration for medical service is bound to fail for that reason alone. The effort to obtain good medical care for the poor must take into account a remuneration that offers a fair return to the experienced practitioner; otherwise the only change that will occur under the insurance act will be to assure the cheap lodge doctor of a certain return guaranteed by the State in place of the uncertain payment from his present patients.

There is one other item that should be considered. It is possible to make the workman contribute his share, but who is to see that he gets *efficient* medical care and nursing? The State? The employer? The County Medical Society? We feel that under the act a man will still feel privileged to exercise his constitutional right of free choice and, if experience in other lines teaches anything, it is that the working man is no more to be trusted than any other citizen in applying his funds in the most efficient way. These are but a few of the thoughts that occur to one on his first reading and cursory study of this bill. The subject will be taken up from time to time if only to stimulate discussion.

H. G. W.

LIP-READING FOR THE DEAF.

THE brief papers in the current issue by Dr. Braislin and Miss Woodrow, which was obtained through the courtesy of Dr. McClelland, call attention to an institution that seems little known to the medical profession of Brooklyn—the Evening School for the Deaf, where lip reading may be acquired. The intimation that this school may be discontinued because of lack of interest is a decided surprise because the existence of the school has been unknown to most physicians. There are many excellent institutions like it that have hid their light under a bushel and only come into public notice when disaster is about to overtake them. The knowledge that there is such an institution available for those deaf or partly deaf patients who are unable to pay the rather large fees asked by private instructors in lip reading, should be welcome news to a generous number of physicians who have patients in need of just such instruction. It should be possible for the medical profession of Brooklyn to keep the school well supplied with pupils.

H. G. W.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SOCIETY OF INTERNAL MEDICINE.

Regular Meeting of November 26, 1915.

Infections of the Mouth, Ear, Nose and Throat as Primary Foci for Secondary Infections.

(For papers under discussion see pp. 97 and 102)

Dr. Francis A. Hulst, in opening the discussion, said:

"It seems to me that we are approaching the stage in bacteriology that we long ago reached in theology whereby we can take almost any stand we want and prove it by Scripture, and I think we had better abide by the Scriptural text to prove these things and stand by those that are good.

"A good deal of the work presented tonight has been based upon Rosenow's work, which has been rather interesting, and if it hasn't done anything else it has stirred up a great deal of study, and the papers tonight have shown you the value of that, especially the figures which Dr. Andresen has given us which are very suggestive, but Dr. Rosenow's work is not entirely accepted. You take some of his latest work, which has been referred to, where he takes the streptococcus from a case of gastric ulcer and injects it into a rabbit and produces a gastric ulcer and where he takes the streptococcus from a case of endocarditis and produces endocarditis in rabbits and the same as he has done recently in herpes zoster, injecting blood into a rabbit and getting a skin lesion. This is not in accord with our usual findings in laboratory animals—to expect that we will find parallel lesions in rabbits as in the human body is not in accord with what we find. Of course, we use laboratory animals to get an idea of the pathogenicity of that particular strain of bacteria, but if we inject the pneumococcus we do not get a pneumonia. If we inject the diphtheria bacillus we do not get a lesion in the throat and so on, and along that line Rosenow's work is quoted as to the bacterial specificity. On the other hand, the clinicians are bringing forth, as we have seen here tonight, clinical proof; that is, they are accumulating a lot of evidence that is very suggestive along this line.

"There is one other point that I suppose Dr. Andresen is expecting me to bring out so that he can get back at me and I expect Dr. Parker is going to help him, and that is the relation of digestive disturbances and pyorrhea. I have had a little personal experience in the mouth with pyorrhea and my digestive disturbances are usually limited to certain occasions, after medical meetings or something of that kind, but one time in talking to my dentist I mentioned the fact when I did have an upset stomach or disturbance of the bowels my movements were much worse and my teeth were very rough and he said that that was an actual fact noted by dentists and the best way to remove the tartar from the teeth was a good dose of epsom salts. We do known that a disordered digestion will give us a coated tongue and, as Dr. Parker has said, I will also mention the fact of what my dentist has said in regard to the increase of tartar in the teeth—Dr. Parker has said it is a foreign body and will irritate the gums. He also said there are all sorts of bacteria in the mouth and in that way making a good ground for bacterial invasion. If we have a chronic state of poor digestion and that is reacting back we have a circle which may turn the opposite way. I just bring that point up that Dr. Andresen and Dr. Parker may answer the questions."

Dr. Elias H. Bartley, in discussion, said:

"I had no idea of discussing these papers and I didn't attempt to arrange my thoughts very systematically as the papers were being read. You will, however, pardon me for giving expression to a general impression, one that I am especially interested in.

"I have for a long time recognized the secondary infections from the tonsils, adenoids, ears and so on and feel that if we are to progress quite as fast as some of the papers have suggested here tonight on the subject of prophylaxis, and that is a part of the subject I am especially interested in—if we are to accept the conclusions of at least one of the papers, it was that every tonsil that is infected should be operated upon and there is but one operation on the tonsil and that is enucleation. Now if you go through tonsils I believe the general impression is that the tonsil is one of the defenses of the system against infection; that the tonsil catches what it can. Unfortunately, some of the bacteria pass this line of defense and get into the circulation or go to the cervical glands or into the general circulation and we have secondary foci. Now I think there are mighty few tonsils in children in their teens that are not subject to more or less cryptic infection. That is the business of the tonsils. It is to collect and stop these things, as I understand it, and they do stop a great many, undoubtedly. There are some they do not stop.

"If you take this statement, then, we are led to the conclusion that for prophylaxis the tonsils should be enucleated in every child somewhere along its course. In other words, the tonsils should be obliterated. We should enucleate them until finally they wouldn't be produced any more. It seems a rather illogical conclusion and where are we to stop? Are we to enucleate every tonsil, or every tonsil that at some time shows a little redress and swelling and evidences of infection? Now there are times when every tonsil presents such a picture. Look in any throat and at certain times you will find that tonsil infected. Should it then be operated upon, remembering that the only operation is enucleation? If such be the case then every tonsil should be enucleated.

"This is a general impression that I get. Now I wish they would straighten me out a little bit on that because that conclusion seems a little radical."

Dr. C. C. Voelker, in discussion, said:

"I feel somewhat like a rank outsider coming here as an average dentist, but my excuse must lie in the fact that Dr. Mayo sometime ago said that the next great step in preventive medicine must be taken by the dentists. Are they ready to take it?

"About four years ago it was my privilege to present before the Second District Society a paper on the subject of prophylaxis in which I reveiwed largely the medical literature on the subject of the close relationship between the various infections and general diseases produced by them, and I am glad to see that the medical profession is working so closely with the dental in that respect. I am also glad to see that the papers brought out the necessity for constant x-ray examination of the teeth in order to eliminate the various infections produced in the body.

"I would like to present one or two cases which might be of interest. I had a patient a few years ago, a young woman 23 years of age, who was in a very anemic state. She could hardly walk and her mother had to lead her into my office. She was pale and sallow and had circles around the eyes. Her mouth presented the most awful picture of destruction that I had ever seen. This patient suffered from constant indigestion. She could not keep any food on her stomach. During the previous six months she had undergone treatment for this condition. The menstrual function was so irregular that it would come and go (there was no regularity whatever about it) and she had been in the hands of several physicians who had not been able to give her much relief. Two dentists had advised the extraction of all the teeth. She had 35 teeth besides the usual number, 3 supernumeraries and an epulis on one of the left lower bicuspid teeth. From every tooth pus flowed in quantities. The tartar accumulations must have been there for ten or fifteen years and must have begun in early childhood because in some places it was almost a quarter of an inch thick—at least an eighth of an inch thick on most of the teeth. At that time I did not use the x-ray as I do now in diagnosing my cases, but I want to say that I started treatment on this particular case in October, 1910, and the only medical attention that the patient got was some iron tonic. I only had her under treatment for two months as she came from the country and could not stay here any longer. I extracted only the bicuspid with the epulis, the three supernumerary teeth and two wisdom teeth. The rest of the teeth were sound and braced. Later I received a letter assuring me that the patient was doing work which the family had never believed possible, that she was in good health and apparently her general systemic condition was normal. This information came to me within two months of the time that the case was dismissed. A year later I received another letter in which the same conditions were repeated and thanking me for having saved the patient's life.

"Another case was that of the State Commissioner of Health. The patient had neuralgia, was in a sort of neurasthenic condition and the only focus of infection I could find was a lower molar on the left side having a gold crown. I removed the tooth and set it to the pathologist and he found the streptococcus viridans. Within a month after the extraction of the tooth the patient was in normal health.

"Another case under the same treatment in Dr. Beck's care was a patient suffering with stomach ulcer. She same into me and said that she did not desire any radical work done as she expected to go on the operating table almost any day. In that case I found the foci of infection to be under a gold crown, which I removed. That was six months ago, she has not been operated on yet and her physician compliments her on her good general health.

"Another case was one of Dr. Andersen's with gastric ulcer. I do not know his treatment of the case. I cleaned up the mouth—the pyorrheic condition, and supplied the patient with some bridge work on the lower jaw.

"Baron Von Oefele wrote an exhaustive paper some few years ago in which he brought out the relationship between the lack of teeth and digestive disorders, and showed where two molars in the jaw were gone and the patient did not digest perhaps 10 per cent. of the food ingested.

"The patient of Dr. Andresen's, to whom I have already referred, was not seen again by me for several months and when he came in I am sure he had gained 15 pounds in weight and seemed to be in good general health, and I might cite many cases.

"Another case was one which Dr. Crane had under his care and in that case we radiagraphed and found on the right lower side an abscess area extending at least one inch over the whole upper jaw. Dr. Crane operated and cleaned up the case and according to the last reports within a year or so after the patient had regained her health. Those are just a few cases.

"I am very glad indeed to see that Dr. Andresen has brought out those interesting cases of gastric ulcer."

Dr. Edward E. Cornwall, in discussion, said:

"This discussion is a very wide one. These three papers have opened up a great many topics that are very interesting.

"I was particularly impressed by Dr. Andresen's remarks on the effect of autogenous vaccine causing signs of reaction both in the mouth and the abdominal lesion. That is particularly striking. As to the fact that those cases with gastric ulcer had pyorrhea does not impress me much, but the other fact does impress me very strongly. As to the pyorrhea and gastric ulcer; we often find ulcers in young people; in fact, they are more prevalent in young people, I think. I think that pyorrhea is more prevalent in older people. There doesn't seem to be a parallelism between pyorrhea and gastric ulcer.

"There is one other question which came up and that is the matter of joint lesions which were not touched upon very extensively, but I remember reading a book some years ago which was written by a Frenchman in which he advanced this thesis: that arthritis deformans (what we roughly, crudely call arthritis deformans), in his estimation, practically all those cases, barring a few special ones which are easily identified by some other cause, were due to a tubercular toxin or a tubercular focus somewhere else. I would like to ask our pathologist if in many of these joint lesions it is or is not true that an absorbed toxin or some kind of an irritant from the focus—not the germ itself, can cause irritation of the joints according to the theory of this Frenchman."

Dr. Douglas B. Parker, in discussion, said:

"Dr. Hulst brought up a rather interesting point when he spoke of the circle in which gastric symptoms can cause an irritation of the gum. Pyorrhea about the teeth will cause gastric symptoms. That is often seen, but, clinically, we know that the removal of the foci in the mouth will cure or benefit a good many of these stomach symptoms, especially the gastro-intestinal symptoms he spoke of. Whether removing the stomach would cure the lesions in the mouth I am not sure. I do not know.

"There was a very interesting point brought out in a way by Dr. Andresen, which I would like to speak of, when he spoke of ether pneumonia. I have seen quite a few cases of operation, not only in the mouth, but in other parts of the body, where the patient contracted an ether pneumonia supposedly following an operation. I hope I will see the day when such care will be taken in prophylactic measures that every patient going on the table to take a general anesthetic will have the mouth put in a healthy condition. I am rather getting to believe that a great many of these cases of aspiration pneumonia could be stopped if the mouth were put in a hygienic condition before the operation. I can remember well, a case about a year ago where quite an extensive operation was done in the mouth—removal of half of the lower jaw. The necks of the teeth were in a frightful condition before operation—pus flowing very freely, and the mouth was in a most unhygienic condition. The patient was operated on without a single thing being done to the mouth. I happened to see the case before operation. I wasn't handling the case, but did assist at the operation. That patient died about a week later from an aspiration pneumonia and I have no doubt but what that was caused a great deal from the unsanitary blood containing a great many infective microörganisms from the mouth. Dr. Bartley's remarks on prophylaxis in that regard I think would be very apropos. I think that is all."

Dr. Claude G. Crane, in discussion, said:

"I would like to answer Dr. Bartley's criticism first. The only tonsils that we operate on are tonsils that present a clinical picture of infection; that is, the tonsil that is infected to a certain extent, that has lost its ability to take care of the infection present and the infection has gone further.

"In regard to the function of the tonsil: that has been discussed for many, many years. I used to believe, and perhaps I do now, that the tonsil has a protecting function and takes care of infection like other lymphoid tissue in other parts of the body. We all know that the lymphoid glands all over act as barriers to the progress of infection, and as the lymphoid tissue known as Waldeyer's ring is present at birth and reaches its full development about the sixth or eighth year and normally, if it has never been infected, begins to atrophy about the twelfth year, and about the age of puberty, it should have pretty well disappeared. We do not see that very often because very few go through without some infection. I believe that the tonsil and adenoid and other lymphoid tissue are situated so that they practically come in contact with all kinds of infection. Everything going through the skin has to practically go through the respiratory passages or the throat passages.

"In regard to enucleation: I have only one point of view. The tonsil that is entitled to an operative procedure should be completely removed. Any other operation means traumatizing the tonsil and leaving behind infective tissue. If you expect to operate that and later operate on tonsils because they are infected and the whole tonsil is certainly infected, nobody can say, 'I will take out the infected part and leave the other part in.' It cannot be done. Nobody ever saw a tonsil that you could take a piece of it out and say, 'This is the infected part and the rest of it isn't.'

"I began taking out tonsils completely about the year 1907. At that time there was a great outcry against it. Very many competent men in town were strongly opposed to it, but most of those men are now taking out tonsils.

"In regard to Dr. Cornwall's question relative to arthritis deformans—whether or not your arthritis can be due to a toxin alone without invasion of the bacteria into the joint: it seems to be the consensus of opinion that the bacteria invade the joint and it is not a toxic joint. It is due merely to the presence of the toxin in the joint or a distant focus, that the bacteria, streptococci as it may be, actually invade the joint structure.

"There is another point in regard to whether these focal infections in the teeth are the primary lesion and cause infections in the nose, sinuses and tonsil tissue. I doubt that very much. I believe that we cannot have a very severe infection in the teeth without at the same time having infection of the tonsil tissue and other lymphoid tissue in the throat. I think that is probably true in most cases. I have had this happen in a patient with a very severe multi-articular rheumatism where we found the streptococcus viridans in the tonsils and also in the throat. By taking care of the patient and removing the tonsils and administering a vaccin made from the tonsils we were surprised to find that the patient (at least, I got this report from our dentist) had a severe pyorrhea of a great many years' standing which entirely cleared up following the use of the vaccin."

Dr. Albert F. R. Andresen, in closing the discussion, said:

"Dr. Parker's reference to the frequency of apical abscesses calls attention to a great weakness in our dispensaries here in Brooklyn. We have no dental clinics in any of our hospitals. The only ones are those of the Department of Health for the benefit of school children and for that reason we do not get real scientific diagnoses on the dental cases in the clinics. All we can say is pyorrhea and have to let it go at that. I hope that some day we will have more dispensary work done by the dentists of this city.

"The question which Dr. Hulst brought up about the infectivity of the streptococcus in ulcer: the streptococcus being the cause of ulcer has not alone been based on the finding of ulcers following infections in the throat, but Rosenow has demonstrated it in patients who have had gastric ulcer. He has taken cultures from the mouth or teeth or nose and obtained the streptococcus viridans and then made cultures of these ulcers—not a single section to look for the streptococcus, but multiple sections, hundreds of serial sections, through the usual sections, and has been rewarded in finding the streptococcus in practically every case. Furthermore, it has been demonstrated in man and is not just a matter of rabbits.

"The question about epsom salts curing pyorrhea is a question that, of course, can be dismissed without any discussion. Epsom salts probably would make a person feel better, but I don't know what effect it would have on the actual infection—on the streptococcus. I am surprised that a pathologist would bring up such a question.

"The story of the dentist in regard to the improvement in the general condition of patients under treatment for these mouth infections is practically typical of all the cases that we have seen, whether they were treated by the dentist or the laryngologist. While we, of course, have seen most of our cases treated by the dentist or laryngologist, after we have seen them, we frequently get histories in these cases of improvement following nasal or dental treatment at some previous time when they weren't taking any medical treatment. They usually come in with a typical ulcer history and we see them when they were treating six or eight months and we give them medical treatment and their stomach would seem to be better. That has been a frequent observation.

"I do not think that Dr. Cornwall's point of ulcer occurring more in young people has been proven. I think we find it practically in all ages. The discussion in regard to carcinoma following ulcer has related more to older people, but I do not think there is any particular age group in which we find ulcer more frequent. In young people it would probably be found in nose and throat infections.

"Dr. Crane brought up the question about there being considerable doubt as to whether there is any relationship between the infections of the mouth and nose and throat. I have seen a good many cases treated by either the nose and throat man or the dentist which refused to get well, but which on being treated by both promptly recovered."

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

FEBRUARY, 1916

MEDICAL SOCIETY OF THE COUNTY OF KINGS. STATED MEETING, FEBRUARY 15, 1916.

The President, Dr. Ralph H. Pomeroy, in the chair. There were about 300 present. The meeting was called to order at 9 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

John M. Auwerda, 332 Jay St.; L. I. C. H., 1912; proposed by C. F. Pabst; seconded by Membership Committee; Dec. '15.

Henry M. Feinblatt, 374 Union St.; L. I. C. H., 1913; proposed by J. C. Cardwell; seconded by L. F. Warren; Jan. '16.

John H. Flynn, 493 Linwood St.; Tufts, 1915; proposed by J. R. Kevin; seconded by J. A. Lee; Dec. '15.

George W. Hart, 3111 Glenwood Road; P. & S., N. Y., 1901; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec. '15.

David Last, 335 So. 5th St.; L. I. C. H., 1913; proposed by W. H. Best; seconded by Membership Committee, Dec. '15.

Wm. Lehrich, 139 Bay 17th St., Univ. & Bell., 1908; proposed by E. H. Mayne; seconded by R. Byington; Apr. '15.

Charles F. McCarty, 418 E. 28th St.; Fordham, 1913; proposed by J. R. Kevin; seconded by J. A. Lee; Dec. '15.

Frank T. Mangold, 1301 Bushwick Ave.; L. I. C. H., 1912; proposed by W. H. Best; seconded by Membership Committee; Dec. '15.

seconded by Membership Committee; Dec. '15.

Filippo Morvillo, 771 Union St.; Univ. Naples, 1899; proposed by H. M. Mills; seconded by Membership Committee; Dec. '15.

John J. O'Keefe, 2653 Church Ave.; L. I. C. H., 1908; proposed by E. B. Wilson; seconded by S. J. McNamara; Dec. '15.

Wm. C. Waggoner, 167 Taylor St.; Miami, 1903; proposed by S. M. Strong; seconded by A. M. Judd; Dec. '15.

Daniel E. Welch, 135 St. Marks Ave; Tufts, 1910; proposed by J. R. Kevin; seconded by J. A. Lee; Dec. '15.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Mark Gordon, 1076 Eastern Parkway; Baltimore, 1900; proposed by S. J. McNamara; seconded by Membership Committee; Mar. '15.

Otto V. Huffman, 89 Joralemon St.; P. & S., N. Y., 1903; proposed by W. F. Campbell; seconded by F. E. West; Dec. '15.

Jacques Loewe, 71 McKibbin St.; L. I. C. H., 1897; proposed by W. H. Best; seconded by Membership Committee; Dec. '15.

Joseph P. Menasse, 592 Henry St.; L. I. C. H., 1906; proposed by J. J. Sheehey; seconded by Membership Committee; Feb. '15.

William Siegmeister, 1978 65th St.; Fordham, 1913; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec. '15.

Walter E. Vogt, 191 St. Nicholas Ave.; Cornell, 1903; proposed by W. Pfeiffer; seconded by R. S. Fowler; Oct. '15.

Applications for Membership.

Applications for membership were received from the following:

Joseph S. Baldwin, 493 Classon Ave.; Cornell, 1913; proposed by R. P. Sullivan; seconded by J. M. Downey; Jan. '16.

S. Ingram Miller, 196 Monitor St., L. I. C. H., 1914; proposed by E. E. Cornwall; seconded by Membership Committee; Feb. '16.

Harry K. Reynolds, 67 Gates Ave.; Univ. & Bell., 1910; proposed by E. Bishop; seconded by D. S. MacNaughton; Feb. '16.

Nathan P. Thayer, 1433 Avenue H.; Harvard, 1905; proposed by E. Bishop; seconded by N. T. Beers; Jan. '16.

Maurice L. Wieselthier, 612 Bedford Ave.; P. & S., N. Y., 1909; proposed by M. Lederer; seconded by J. H. Isquith; Jan. '16.

Philip Leibowitz, 1246 St. Johns Place; L. I. C. H., 1913; proposed by C. W. Stickle; seconded by Max Lederer.

Jacob Heller, 928 Eastern Parkway; Cornell, 1899; by transfer from N. Y. County Med. Soc.; proposed by A. M. Judd; seconded by Membership Committee.

Scientific Session.

An Open Meeting under the Direction of the Committee on Public Health. Topic: The Department of Health, the Responsible Representative of the Medical Profession.

(a) "The Responsibilities of the Department of Health of the City of New York."
By Haven Emerson, M. D., Commissioner of Health.

(b) "Attacking the Venereal Peril."
By Alec Nicol Thomson, M. D.

(c) "Adult Hygiene."
By Louis I. Harris, M.D., Chief of Division of Industrial Hygiene in the Department of Health.

(d) "The Patient and the Physician: Does the Department of Health Trespass on Their Individual Rights?"
By Thurston H. Dexter, M.D., Chairman, Committee on Public Health.

(e) Discussion.
Opened by Louis C. Ager, M.D., Member of the Milk Commission.

Dr. Emerson closed the discussion.

Meeting adjourned at 11 p. m.

CHARLES E. SCOFIELD,
Secretary.

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VOL. X. APRIL, 1916 NO. 4

THE REHFUSS FRACTIONAL METHOD OF TEST MEAL EXAMINATION.*

Report of Findings in 150 Cases.

Albert F. R. Andresen, M.D., and John B. D'Albora, M.D.,
Brooklyn—New York.

IT has long been recognized that the ordinary method of examining the gastric contents one hour after the ingestion of a test meal is only of limited value, being based upon the presumption that the highest acidity occurs at the end of an hour. By means of the removal of the contents at different intervals after the meal has been given, usually on successive days, investigators have shown that the one hour mark is not invariably the high point. A so-called larval hyperacidity has been found to occur before the end of one-half hour, the acidity returning to normal by the end of one hour. In other cases the highest acidity occurred as late as two hours after the taking of the test meal. These experiments have been performd mainly in research laboratories. As a diagnostic procedure, however, daily passage of the large tube and the time consumed are obviously too troublesome to both physician and patient to be carried out as a routine in all cases.

About one and a half years ago Rehfuss first described a new tube for the removal of gastric contents. This tube (Fig. A) is constructed like an Einhorn duodenal tube, except that the metal tip is larger and heavier than that of the duodenal tube and has larger apertures in it, the diameter of these apertures being the same as that of the caliber of the tube (about 8 Fr.). The tube has marks indicating when the tip is in the stomach (20 in.), and when it is in the duodenum (26 in.). The weight of the tip causes it to seek the lowest level of the stomach, making the removal of practically the entire residue possible. Rehfuss and his associates used this tube at first to determine the residue in a normal fasting stomach at least 12 hours after food had been eaten. They found that the generally accepted belief that a residue of more than 10 c.c. was evidence of a pathological condition, was fallacious, as they frequently obtained 50, or even 100 c.c. from normal stomachs. They estimated the normal average to be about 52 c.c. of colorless or bile-stained fluid with a free acidity of 18 and a total of 30. They also found that free acid was never found when the total acidity was under 10.

After these experiments, realizing the convenience of using a tube so readily introduced and so easily retained by the patient, they began using the tube for the fractional removal of gastric contents at 15-minute intervals after a regular test meal of crackers and water. A complete gastric analysis was then made of each of the specimens thus obtained, and it was found that by plotting out the findings of the free and total acidity of the successive specimens on a chart, a curve of acidity could be obtained which Rehfuss and his associates considered might be found to be characteristic in different conditions of the stomach. They pointed out that a single examination after one hour is no more reliable than the examination of a single specimen of urine, but held that the fractional method of examination is a true method of determining gastric function. Anatomical and pathological changes will cause changes of function, so that the character of the gastric secretion may be taken as an index of the condition of the stomach and of its response to stimulation.

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* Read at a meeting of the Brooklyn Pathological Society, Feb. 10, 1916.

It was found by Rehfuss and his associates, and we have been able to confirm their findings, that while the one-hour point may be the highest point of acidity in many cases, it is not, on the whole, reliable. As mentioned before, cases of larval hyperacidity, and of late hyperacidity, would be entirely overlooked, as the contents might be normal at the one-hour point. Cases with apparent achylia or subacidity at one hour occasionally show normal findings, or even hyperacidity, at two hours, and cases with high acidity at one hour may drop rapidly to normal and be merely due to temporary causes. In the single specimen, also, there is no indication as to the time of evacuation, or motor function, of the stomach. Furthermore, the occurrence of bleeding, especially in its relation to the regurgitation of bile, cannot be determined.

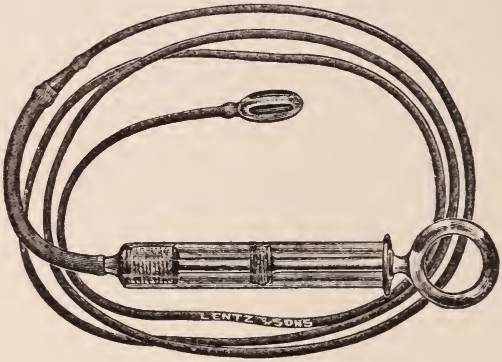


Fig. A

The technique we have used in our series of 150 cases is as follows:

The patient is instructed to take a test supper of half-cooked rice and raisins twelve hours before applying at the clinic on a fasting stomach. A test meal of two soda crackers and six ounces of water is given and immediately followed by the introduction of the tube, four ounces of water being used to aid in the swallowing of the tube by the patient. By carefully explaining to the patient how the tip of the tube can be swallowed like food and how nausea and vomiting may be avoided by deep breathing through the mouth as soon as the tube has been swallowed, we have had very little difficulty in introducing the tube. Until the examination is completed, usually from two to three hours, the patient keeps the tube in the stomach, being given something to read to distract attention from the slight discomfort due to the presence of the tube lying in the side of the mouth. Swallowing is to be avoided so as not to contaminate the gastric contents with the alkaline saliva. Any mucus or saliva collecting in the mouth must be expectorated.

By means of an all-glass, half-ounce rectal tip syringe with an asbestos-wound plunger, we remove about six or eight c.c. of gastric contents every fifteen minutes, being careful to see that the mark on the tube is near the line of the teeth, so that the tip of the tube has not been gripped in the pylorus or entered the duodenum. These removals are continued until the stomach is empty, as proved (1) by inability to remove more material with the syringe, (2) the condition of previous specimens, and (3), if necessary, by lavage to determine small amounts of residue.

As only two of us have been doing this work, and as frequently as many as eight patients have been examined at one time, we have not found it practicable to remove contents at five-minute intervals during the first fifteen minutes, as Rehfuss recommends, but have made the first removal at the end of the first fifteen minutes.

The contents thus removed are filtered into bottles set up in rows opposite the patients' cards, the filtrate being examined as follows:

One c.c. of the filtrate is removed by means of a 1 c.c. nipple pipette and titrated against 1-100 normal sodium hydrate solution, dimethylamidoazobenzol and phenolphthalein being used as indicators for free and total acidity. If no free acid is present, a drop of the filtrate is dropped into very dilute ferric chloride solution to test for lactic acid. The residue is tested for occult blood by means of the benzidin test, as many as fifteen or twenty examinations being made by means of one mixture of the reagents, as follows: In a glass petri dish an amount of benzidin about half the size of a split pea, is rubbed up with a slightly smaller amount of barium peroxide, and enough glacial acetic acid added to make a thin layer of the mixture on the bottom of the dish. By means of a pipette, a drop of the residue from each specimen is then dropped on the mixture. A blue color, developing rapidly at the edges of the drop of residue, has been found to be a reliable indication of the presence of occult blood. We have had cards printed along the lines of the charts described by Rehfuss, on which the findings can be graphically represented. The free and total acidity of the successive specimens form a curve, and by means of symbols the presence of blood, occult or visible, bile, mucus, lactic acid, lactic acid bacilli or microscopical findings can be seen at a glance. These cards are filled out as the examinations are made and become a part of the patient's record, thus avoiding much needless transcribing.

Our observations have confirmed the idea of Rehfuss and his associates that this method of examination is a reliable test of gastric motility. We have found that the normal stomach emptied itself of the cracker and water test meal in from two to two and one-half hours, and a finding of a considerable residue in the stomach after three hours was usually accompanied by other evidence of motor insufficiency, such as rice and raisin residue after eight hours or bismuth residue after six hours. In achylia and in some cases of duodenal ulcer, early disappearance of the test meal material occurred, being an indication of the hypermotility accompanying these conditions.

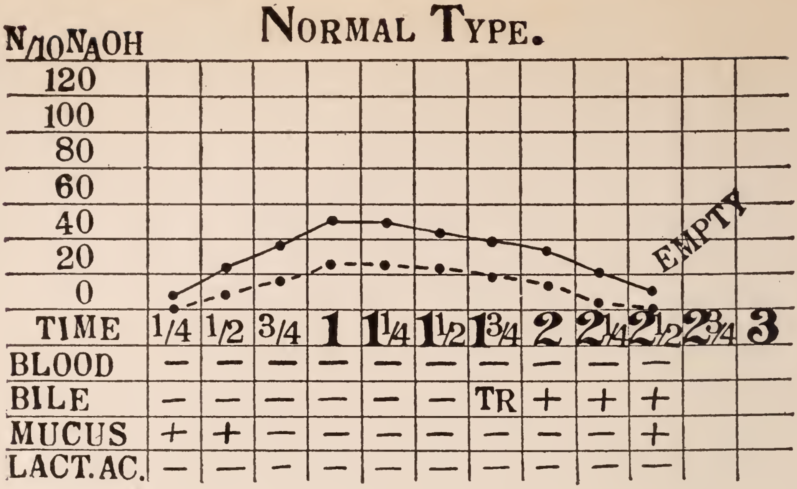


Chart 1

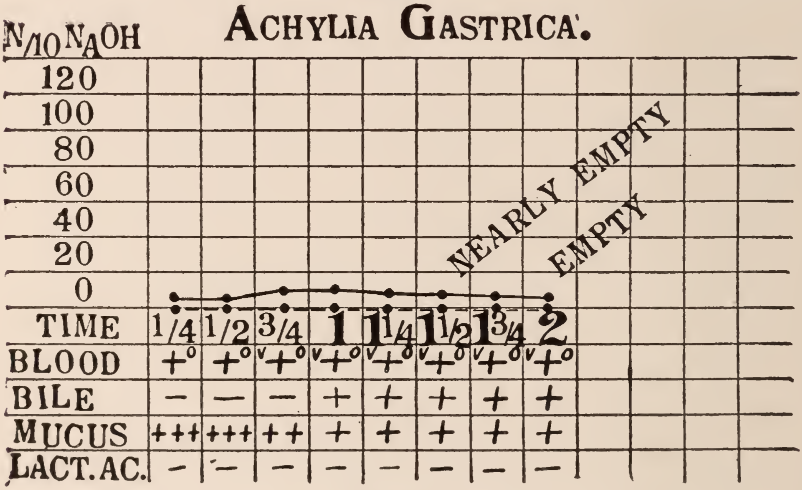


Chart 2

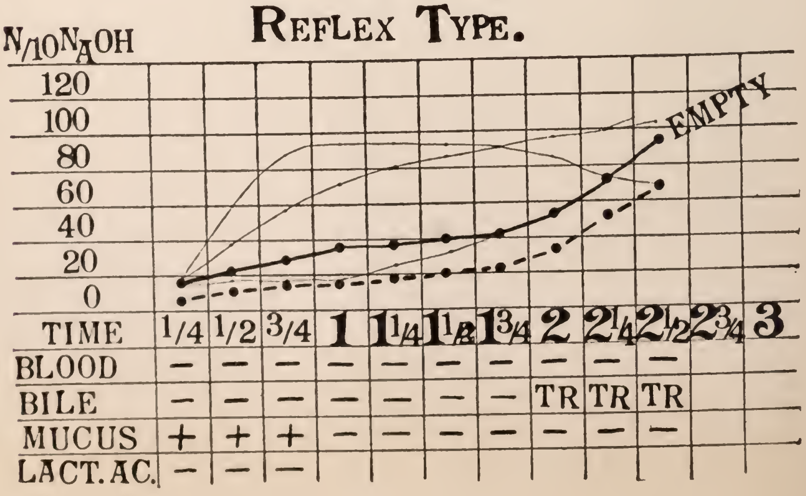
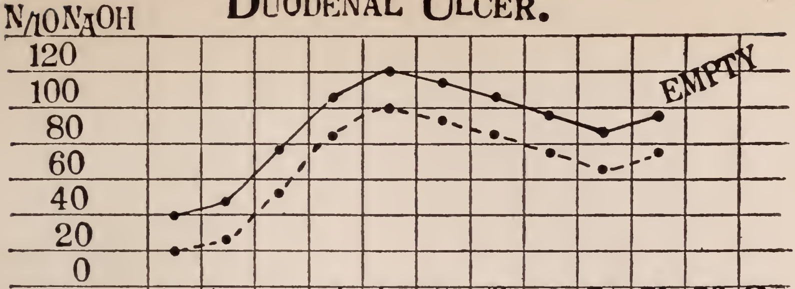


Chart 3

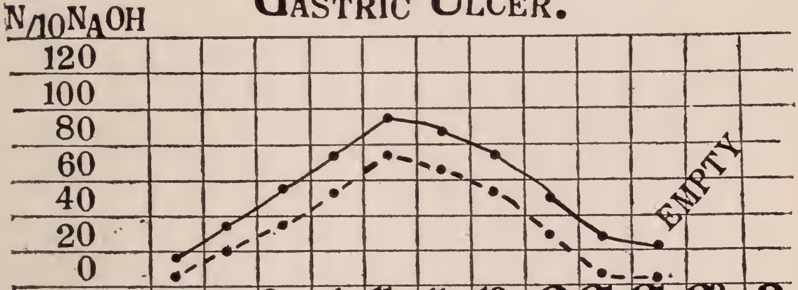
Duodenal Ulcer.



TIME	1/4	1/2	3/4	1	1¼	1½	1¾	2	2¼	2½	2¾	3
BLOOD	—	—	—	—	—	TR°	+°	v+°	v+°	v+°	v+°	
BILE	—	—	—	—	—	—	TR	+	+	+	++	
MUCUS	—	—	—	—	—	—	—	—	—	—	—	
LACT.AC.	—											

Chart 4

Gastric Ulcer.



TIME	1/4	1/2	3/4	1	1¼	1½	1¾	2	2¼	2½	2¾	3
BLOOD	+°	+°	+°	+°	+°	v+°	v+°	v+°	v+°	v+°		
BILE	—	—	—	—	—	—	—	—	—	+		
MUCUS	+	+	—	—	—	—	—	—	—	—		
LACT.AC.	—	—	—	—	—	—	—	—	—	—		

Chart 5

An interesting observation made by us has been that the metal tip of the tube, which is about two and one-half cm. long and one cm. in diameter, will, in some cases, pass rapidly through the pylorus, occasionally as soon as fifteen minutes after the taking of the test meal, as evidenced by the aspiration of clear duodenal contents at that time, and the sense of resistance, followed by the sudden yielding of the tube, as it is pulled out. This would seem to contradict some of our ideas regarding the evacuation of the more liquid contents of the stomach before the solid particles.

We have found that the curves of acidity, which Rehfuss thought at first might be found to show typical variations in different conditions, have not proved to be definitely of value, except in two abnormal conditions. The incidental findings, such as blood, bile, mucus, lactic acid, lactic acid bacilli and microscopical findings, have, however, been interesting and often typical. The normal curve may vary considerably, but Chart 1 shows what may be considered the most common normal curve. The curve of free acidity is represented by a dotted, that of total acidity by a solid, line. Starting with no free acidity and a total of eight at fifteen minutes, there is a slow rise, the curve reaching its maximum height of twenty-five and fifty at one or one and one-fourth hours, thus agreeing with the hitherto-accepted idea that the highest acidity occurs at the one-hour point. There is then usually a more or less gradual downward slope, until, when the stomach is empty, at two and one-fourth to two and one-half hours, the secretion of gastric juice has been reduced to a minimum, and no free acid, or only a small amount, is present. Normally, no blood is found in the contents, but blood from trauma on swallowing the tube may be found, usually disappearing after the first hour. Bleeding may also result from force exerted in pulling the tip of the tube out of the grip of the pylorus, as may be necessary if the patient continues swallowing after the tube has been properly introduced. Mucus is only found in the first few specimens, being probably mucus swallowed when the tube was introduced. Bile usually begins to be found after one to one and three-fourths hours, at the time when food begins to leave the stomach, the pylorus being temporarily opened, allowing some regurgitation of duodenal contents.

In true *achylia gastrica* the line representing free acidity runs straight along the zero line and the line of total acidity is also nearly straight, rarely going higher than ten or fifteen. (Chart II.) In every one of our thirteen cases blood, occult and usually also visible, has been found in every specimen removed. This is explained by the fact that in achylia the mucosa is usually atrophic and friable and bleeds easily. This constant finding of blood leads us to the conclusion that so-called hemorrhagic achylia is not a separate disease. Bile is found earlier in this condition than in the normal, often by the end of one-half hour, because of the earlier opening of the pylorus and the more rapid emptying of the stomach, which is usually empty by two hours at the latest. Mucus is found throughout, especially in alcoholic catarrh.

In *carcinoma* the findings are practically the same as in achylia, with the additional finding of lactic acid and lactic acid bacilli and delayed emptying in cases with stasis, or carcinoma cells in sloughing cases. Rehfuss has done considerable research work in carcinoma cases, investigating the value of such newer tests as the Wolff-Junghans test. Our five cases of carcinoma have been included under the achylias.

In *reflex conditions, i. e.,* in cases having gastric symptoms resulting from appendicitis, gall-bladder or pelvic disease, or any other inflammatory condition in the abdomen, but outside of the stomach, we have found, in a series of seventy such cases studied, a fairly characteristic type of curve. This is shown in Chart III. The characteristic feature of the curve is that while it may rise *more* or *less* rapidly than shown in the chart, it remains high at the end, when the stomach is empty, indicating a reflex continued hypersecretion. Modifications of this type of curve have been found almost invariably in our series of reflex cases, so that we have now come to consider that patients showing this finding are suffering from a definite pathological condition outside the stomach.

In *duodenal ulcer* our findings, shown in Chart IV, are based on a total of twenty-eight cases, of which five were operatively and three were roentgenographically demonstrated, while several more gave definite histories of duodenal hemorrhage. The acidity curve was found not to be characteristic, although the general tendency was toward a rapid rise with a reflex type of continued hypersecretion. Some of our highest acidity values were found among these cases. The absolutely typical finding in duodenal ulcer was found to be the appearance of blood, at first occult, then visible, occurring for the first time coincidently with the first appearance of bile in the gastric contents, which, in our opinion, can be accounted for only by the presence of bleeding in the duodenum. The only other conditions which could possibly cause this finding of blood in the reflux from the duodenum would be those which would result in a discharge of blood from the bile or pancreatic ducts. Such conditions rarely, if ever, occur. This finding, taken in conjunction with a typical history and the physical findings of peptic ulcer, would locate this ulcer in the duodenum. It has occasionally cleared up a diagnosis where the x-ray did not give conclusive evidence of the lesion present. A rapid emptying of the stomach would indicate a non-indurated ulcer not near the pylorus, delayed emptying, an indurated, post-pyloric ulcer.

In *gastric ulcer* the findings have been least characteristic. The curve of acidity has varied considerably, being very high in some cases and normal or even low in others, but in uncomplicated ulcer there was usually a return to the normal low free and total acidity at the end of two and one-half hours, in the sixteen cases studied, of which three were operated upon. Chart V shows the most common type of curve. In pyloric stenosis emptying was delayed or entirely absent and the acidity curve after an initial rise, remained level to the end, indicating a continued secretion. In most cases occult blood was found in every specimen removed and in bleeding cases, visible blood was seen.

Our observations in these forty-four ulcer cases have given us an opportunity to study the relation of pain to hyperacidity. While not many patients have complained of pain during the period in which the tube was in the stomach, those who have had pain usually were found to have it entirely independent of the degree of hyperacidity. Sometimes the pain would be most severe at time when the acidity was low, sometimes vice versa. Some cases showed more pain when the stomach was emptying itself and bile was being regurgitated; others were more comfortable at that time than before.

In our twenty-two cases of visceroptosis uncomplicated by any inflammatory condition, the curve of acidity was usually fairly normal, with some tendency to assume the reflex type. In tuberculosis, subacidity was found to be the rule, except in two out of our seven cases, in which an ulcer was present. In syphilis the findings were not characteristic, except in the two cases out of seven, in which ulcer was found. Both the syphilitic and tuberculous patients with ulcer gave the usual findings for ulcer. Miscellaneous conditions, such as heart lesions, diabetes, nephritis, etc., showed no changes in the curve.

A review of the diagnoses in the 150 cases forming the basis of this study is shown in the table. Cases with complications are shown under headings of both the conditions present, which accounts for the fact that the sum of all the cases listed is 168.

The large number of cases of ulcer in our series is accounted for by the fact that we have included in the series a number of private patients who were examined in our office work, and that we have many of these cases referred to our clinic at the Brooklyn Hospital Dispensary by physicians in other hospitals and in various employees' associations. The fact that so few of our cases have come to operation is accounted for by the fact that we have been successfully treating infections of the gastro-intestinal tract along the lines suggested by Rosenow's researches in regard to the etiology of these infections, as reported in previous communications.

Conclusions: 1. The Rehfuss fractional method of examining the gastric contents after a test meal is sufficiently practicable to use as a routine procedure in gastrointestinal cases.

2. In certain diseases, notably duodenal ulcer, achylia gastrica and reflex gastric conditions, it gives valuable aid in making a diagnosis.

3. It can be carried out with less expense to the patient than roentgenologic examinations, and may often obviate the necessity for such examinations.

Analysis of 150 Cases Studied:

Disease	*Number of Cases*	*Complications*	
Gastric Ulcer	16	Appendicitis	5
		Gall-bladder Disease	1
		Tuberculosis and Syphilis, each	2
Duodenal Ulcer	28	Appendicitis	7
		Gall-bladder Disease	2
		Pelvic Disease	3
Appendicitis	30	Gastric Ulcer	5
		Duodenal Ulcer	7
		Pelvic Disease	4
		Syphilis	1
Gall-bladder Disease	9	Gastric Ulcer	1
		Duodenal Ulcer	2
Achylia Gastrica	13	Carcinoma	5
		Pernicious Anemia	1
		Appendicitis	1
		Goitre	1
Tuberculosis	7	Gastric Ulcer	2
Syphilis	7	Gastric Ulcer	2
		Appendicitis	1
Visceroptosis	22	Uncomplicated.	
Pelvic Disease	31	Duodenal Ulcer	3
		Appendicitis	4
Miscellaneous	12		

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ATTACKING THE VENEREAL PERIL.*

Alec Nicol Thomson, M.D.,
Brooklyn—New York.

PERHAPS a more descriptive title for this paper would be "The Combating of Venereal Disease by Co-operative Measures."

This audience requires no demonstration of the prevalence or communicability of gonorrhea and syphilis. Neither need we dwell upon the incapacitating sequellae of gonorrhea nor the late disabling manifestations of syphilis. You and I, because of our special knowledge and our close contact with the public are particularly qualified to co-operate with the various organizations engaged in attacking the venereal peril.

We admit the existence of venereal disease and if we are asked how to prevent it we advise care in using public utensils, we urge personal cleanliness and we give a final warning against exposure to infection through promiscuous sexual intercourse. Is this adequate? Do we do our part as citizens if we fail to clean out the focus that comes under our care? Have we filled our obligation to the community any better than the health officer who happens upon a typhoid infected water supply and does nothing but issue a warning?

We have facilities for diagnosis both private and free. We have members of the medical profession doing laboratory work in the city departments, in the hospitals and dispensaries, and also privately. They are capable and willing to aid us in our diagnosis. We have hospitals and dispensaries to care for our cases unable to afford our fees. This is not enough for the purpose. We as practitioners must combine with our institutions, with our industries, and with each other in a campaign that will educate the public and the profession to the seriousness of the situation before we will have started much of a combat.

The routes of attack divide rather naturally into:

Publicity and Education.
Advice and Diagnosis.
Treatment and Prevention.

Publicity and education will deprive the quack of his biggest assets, mystery and ignorance. The fake medical schemer has been hard pressed during the past few years and further plans for the complete abolishment of quackery must include facilities of good repute properly advertised to the public. This the Health Department is doing in its advisory capacity. The treatment question is being solved to some extent at the Brooklyn and other hospitals. Other cities and states are also doing this work. The pioneer work done in Oregon has resulted in a system of publicity, advice, service and educational work which might well serve as a working basis for Brooklyn, and the whole state.

Educational work by organizations that are not city or state units is helping out tremendously, but nothing carries greater weight than official documents, for while we may be against the government, we nevertheless heed its official workings. Social Hygiene Societies, and various organizations, such as clubs, churches, associations, etc., are doing excellent work in sex hygiene but we cannot, at present, measure the effect that this will produce upon venereal disease. In our warfare, this work makes the path easier and by co-operation we can get an opening into broader fields of endeavor.

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* Read before the Medical Society of the County of Kings, Feb. 14, 1916. From the Genito-Urinary Department, Brooklyn Hospital Dispensary.

How many in this audience have read the Department of Health circular on venereal diseases? How many give venereal patients instruction cards telling about gonorrhea and syphilis? Has not the time arrived when our patients should receive, from us, the correct educational literature upon sex hygiene and venereal disease, so badly needed by the public for its own protection?

Granted that the quack is cornered and only needs to have the death blow administered; assuming that the laity is being taught Social Hygiene and greater publicity is required; appreciating that the facilities for diagnosis now at hand are being used and can be easily enlarged to meet future needs; THEN the problem facing us is the provision of treatment facilities for the cases now being encountered. This is a very important division of the forces available in the co-operative warfare that must be waged against venereal disease. The treatment facilities that are provided must be up to a high standard in order to exercise the greatest degree of control in these readily communicable diseases.

Standard requirements have been outlined by the Genito-Urinary Section of the Associated Out-Patient Clinics of the City of New York and to dispensaries complying with this high standard the Department of Health refers patients unable to obtain private medical attention.

The prevention and control of communicable disease calls for treatment in addition to the usual work of the Health Authorities and in venereal disease this can best be obtained by greater co-operation between the general profession, the hospitals and the Department of Health.

To illustrate one line of attack aimed at the target of venereal disease as it exists, let me describe to you, in a general way, the methods used at the Brooklyn Hospital Dispensary.

The genito-urinary department of the Brooklyn Hospital Dispensary was established by Dr. Rathbun in 1904. At that time he was the only worker. At the present time we have an active, efficient department serving the community in a manner which, at least in our city, is different from the average.

The growth of the department has been gradual and progressive from its establishment with one doctor attending two clinic days each week to the present time when thirteen doctors are needed to properly care for the patients at six afternoon and six evening clinic sessions.

The day and evening clinics are directed by the same chief, so that each division becomes a distinctly separate unit in all details—staff, history file, contact with patient, etc. The afternoon service is of the usual dispensary type with an admission fee of ten cents and a nominal charge for medicine. For the evening services a charge of one dollar per visit is made, covering both treatment and medicine. In order to correlate the "free" and "pay" services, doctors from the afternoon staff are assigned to the evening clinic of the same division, so that patients whose circumstances require a change from one clinic to the other, remain under the care of the same physicians. To illustrate: A man needs treatment twice a week but has a job. He can get time off from his work one afternoon a week and can afford to attend the evening clinic for his other treatment. The plan of organization is such that other necessary variations can easily be arranged.

No clinic service can be complete without a thorough history system that keeps every case record in concise but complete form and easily available. The Brooklyn Dispensary history sheet is complete but not overladen with printed detail.

There are two topic heads on the history blank from which it is expected to obtain a great deal of valuable data for future extension of the work. Under the topic "referred by" the value of the clinic to the other departments of the hospital, to other hospitals, and organizations, to the general practitioner and to the Department of Health will be demonstrable.

To the person or institution referring the patient, an acknowledgment is sent on the day of admission. In this manner the Department of Health, particularly, can check the results of its advisory service for syphilitic food handlers. It then becomes incumbent upon the clinic to maintain its control or report loss of control back to the proper authority.

The topic "previous treatment" brings out an astonishing amount of "quack," druggist and self medication abuse. These two topics are going to further demonstrate the need of educating the public to the necessity of prompt and honest medical treatment, preferably by a private practitioner, but if this is not possible then the problem must be met by such an organization as the Brooklyn Hospital Dispensary. As protectors of the public health, whether our field be that of family physician, specialist, hospital worker, or health department official, we must realize our responsibility as individuals and as a profession to co-operate in the control of all communicable disease. We therefore can no longer neglect the venereal group.

An institution working to protect the community must place the patient well in the foreground, although the object in organizing a venereal clinic is really two fold: First, the proper treatment of the patients, the prevention, so far as possible, of reinfections and the spread of the diseases to others; second, the scientific study of venereal diseases, the investigation and elaboration of methods of treatment, and the training of workers in this branch of medical science. The clinic effectively operating on this dual basis becomes a valuable factor in the education and protection of the public.

Protection of Public Health demands control of communicable disease. In order to maintain supervision over cases until they are no longer a menace to the community, something must be done to regain control if the patient ceases treatment before being discharged as cured. To do this in the usual manner of Social Service Work is obviously difficult. Personal visitation in venereal work is not practical unless under the direction of unusually qualified and tactful persons. The use of a card mailed in a sealed envelope, requesting a return visit, is simple and efficient. The envelope has a return address but not the institution name, thus eliminating home comment. At least three cards are sent before removing the case history from the active list. The interval between cards depends largely upon the degree of menace in each case. This degree depends upon various factors. A primary or an active secondary syphilis, a refractory patient, and other similar points determine the number and the frequency of the cards.

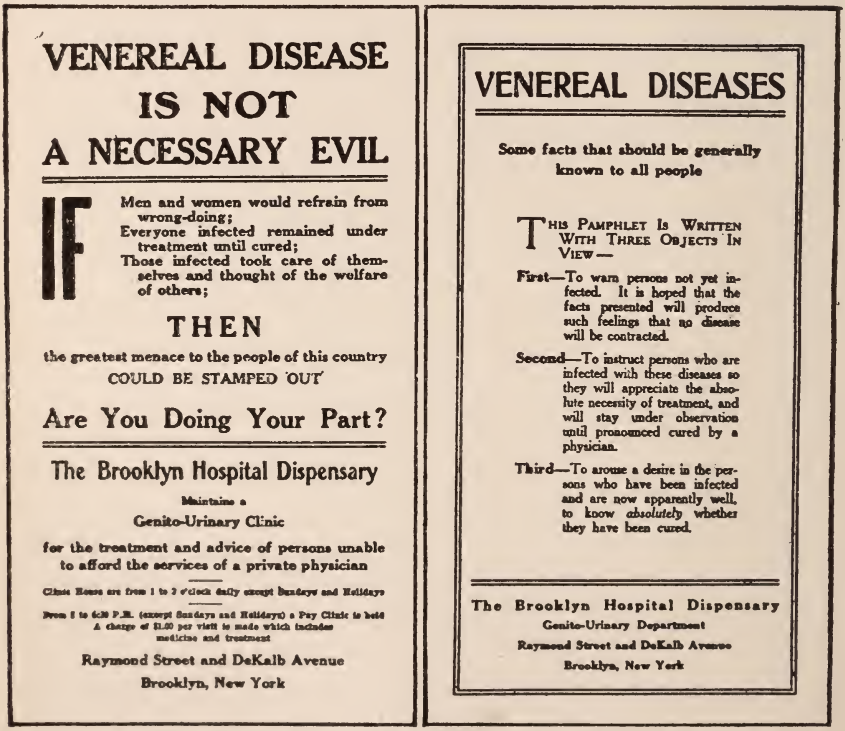
The third card sent is stamped "YOUR LAST CHANCE." Frequently this does the work. The value of this method was tested during a six months' trial period. One division sent cards while the other did not. The following table shows the results:

First 6 months of year 1914—no cards sent.		
Division sending	New Cases 98	Revisits 869
Division not sending	New Cases 98	Revisits 845
First 6 months of year 1915—Cards sent.		
Division sending	New Cases 165	Revisits 1304
Division not sending	New Cases 142	Revisits 835

Certainly the 23 additional new cases did not make the difference of 469 revisits. The divisions were closely parallel in 1914. The difference cannot be wholly due to weather conditions, holidays, and the usual factors of routine influence upon dispensary attendance.

The result of this follow up method has been a decided increase of control by revisits to the clinic, return to private physicians or other hospitals and the resuming of treatment in other cities. This information reaches us by mail, by telephone, by friends as well as by personal return of patients. About sixty-two per cent of the patients ceasing treatment before discharge are being heard from by this simple method.

Each new case admitted to the department is presented with a copy of a ten-page pamphlet upon venereal diseases. The effort to drive home the message by accent type, short sentences, common language, and the general arrangement has over-shadowed any attempt at literary style.



VENEREAL DISEASE
IS NOT
A NECESSARY EVIL

IF
Men and women would refrain from wrong-doing;
Everyone infected remained under treatment until cured;
Those infected took care of themselves and thought of the welfare of others;

THEN
the greatest menace to the people of this country
COULD BE STAMPED OUT

Are You Doing Your Part?

The Brooklyn Hospital Dispensary
Maintains a
Genito-Urinary Clinic
for the treatment and advice of persons unable
to afford the services of a private physician

Clinic Hours are from 1 to 2 o'clock daily except Sundays and Holidays

From 5 to 6:30 P.M. (except Sundays and Holidays) a Pay Clinic is held
A charge of $1.00 per visit is made which includes
medicine and treatment

Raymond Street and DeKalb Avenue
Brooklyn, New York

VENEREAL DISEASES

Some facts that should be generally
known to all people

THIS PAMPHLET IS WRITTEN WITH THREE OBJECTS IN VIEW—

First—To warn persons not yet infected. It is hoped that the facts presented will produce such feelings that no disease will be contracted.

Second—To instruct persons who are infected with these diseases so they will appreciate the absolute necessity of treatment, and will stay under observation until pronounced cured by a physician.

Third—To arouse a desire in the persons who have been infected and are now apparently well, to know *absolutely* whether they have been cured.

The Brooklyn Hospital Dispensary
Genito-Urinary Department
Raymond Street and DeKalb Avenue
Brooklyn, New York

Reproduced by the Courtesy of the American Social Hygiene Association

Translations of the pamphlet are being made. In addition to the Brooklyn Hospital Dispensary pamphlet the New York City Department of Health pamphlet on venereal diseases is distributed. During the course of a patient's treatment the Department of Health card on gonorrhea or syphilis is given and is a useful therapeutic measure. The patient must be inoculated with the stick-to-it-until-you-are-well idea. To do this demands constant advice and encouragement. The door from the waiting room into the history room has a sign upon it one by two feet. Across the top of this sign the patient is greeted each visit with the information YOU MUST COME TO THE CLINIC REGULARLY FOR TREATMENT, then appear the days that he is expected to return for treatment and a final line which reads, DO NOT STOP TREATMENT UNTIL THE DOCTOR TELLS YOU THAT YOU ARE WELL.

A bulletin board two by four feet is hung in the waiting room. The basic matter upon it is always the same but it is variously presented. The arrangement is under three genereal headings: Prevention, Syphilis, Gonorrhea. The notices posted under these headings are in various shapes, colors, types, and wordings. They are changed weekly and they are usually in easily understood language and sometimes in common parlance.

Under the disease titles there are frequently posted the instruction sheets of other clinics and of various departments of health.

Beside the board itself there are two frames for notices. One is permanent and the other is changed at intervals. The permanent notice reads:

THIS CLINIC WANTS TO HELP MEN
WE HAVE A PAMPHLET
EVERY PATIENT COMING HERE IS ENTITLED TO A COPY.
THE DOCTOR WILL BE GLAD TO GIVE YOU AN EXTRA COPY
IF YOU HAVE A FRIEND IN NEED OF HELP. SPEAK TO HIM.

The notices to be changed cover hygienic points such as care of the teeth, cleanliness, diet, etc.

Given the organization, equipment, and desire to serve the community through the patient, the road leading to the greatest degree of success is co-operation with other bodies striving in the same field but with different parts of the work.

Invasion of the domain of quackery by the Department of Health has been successful. Meeting fire with fire works. Therefore with the co-operation of the Committee of Fourteen of New York City, The Brooklyn Hospital Dispensary offered to place the Board of Health plates in its territory.

After various conferences with the Department of Health, the Committee of Fourteen and the Retail Liquor Dealers Association of Kings County, metal plates offering the facilities of the Department of Health for advice and diagnosis, and of the Brooklyn Hospital Dispensary for the treatment of Diseases of Men have been made and are now being placed in saloon toilets, factories, etc.*

It is, as yet, too early to know what the result of this work will be, but from the records of the Boards of Health of this city and elsewhere it is certain that good must follow, and an ever increasing number of men be brought and kept under treatment until no longer a menace to the community. This will not only apply to the Brooklyn Hospital Dispensary but through awakening a desire for knowledge of certain cure in the patient it will surely follow that many men will return to the private practitioner.

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* At time of reading proof 36 saloons have been visited and 30 signs placed. In 11 saloons no signs were found. In 23 saloons more than 137 quack signs and patent medicine advertisements have been removed. At this point Dr. Thomson showed a dozen lantern slides illustrating the Brooklyn Hospital signs, the plates used in advertising the facilities of the Department of Health and the Brooklyn Hospital as well as examples of advertisements that have been removed.

When our signs go up the quack signs come down! Co-operation with other societies such as the American Social Hygiene Association, the Society for Sanitary and Moral Prophylaxis, of New York, as well as with business organizations in the territory about the institution, has been and will be of great value to us and to the community, and should be joined in by the whole medical profession, both public and private, to the mutual advantage of the doctor, the patient and the not yet infected citizen.

No work such as this article has outlined can be judged without the passing of time. The question of pay clinics in the special branches of medicine and surgery is a vital topic that is in its infancy. Some adequate facility must be provided for each group of our population in need of special attention, including a place in the community for specialized treatment of the patient unable to afford the properly equipped private practitioner's charge who is barred from patronizing the dispensary by reason of his work, his pride, or his financial ability to pay a modest fee.

In the sphere of venereal disease, every facility that can possibly be provided for early diagnosis and proper treatment is of paramount importance in protecting the individual, advancing knowledge, perfecting treatment, training workers, combating quackery, promoting social hygiene, and conserving the public health.

Further work in combating venereal disease must be done. Here in Brooklyn, we have a great industrial and home community that stands in need of such work as has been outlined. I have merely suggested some of the things to be done and have tried to show you the beginning that is being made at the present moment in our city. This work will not be completed in our generation. The movement will be well under way when all quack signs are down and every fake medical scheme is out of business. While this is being done, while the start is being made we should prepare for the future by availing ourselves of all the latent co-operative possibilities now within our reach. Use the Department of Health facilities for diagnosis, if your patient cannot afford private diagnostic aid. Help the study of the ravages and prevalence of venereal disease! Report your cases, as requested. In the week ending January 15, 1916, only 86 cases of Gonorrhea were reported. Is it possible that during that week this audience only saw 86 cases? During that same week 379 cases of tuberculosis and 322 cases of syphilis were reported. These figures apply to the whole city of Greater New York.

Co-operate in the distribution of honest reading matter and instruction cards to the infected individual. Co-operate with the Department of Health, Social Hygiene Organizations, and the various civic and educational societies. Such co-operation by us all, as medical workers, is absolutely essential to success.

From the altruistic viewpoint we as medical practitioners can do great good in our various spheres in the community, while, on the other hand by creating a demand for thorough professional care through education of the public along the lines indicated, we will in no way deprive the physician of his legitimate income.

If it is true that we all desire to see the reduction of typhoid, if we all rejoice at the practical suppression of small-pox in this great city, to what a towering height must rise our desire to see the elimination of venereal infection with its far greater social and economic loss in every walk of life and branch of government!

TRICHLORACETYLDIPHENOLDIIODIDE.*

T. A. Wallace, M.D.,

Manhattan—New York.

THIS substance is a dark brown liquid, soluble in water a little over 7 per cent. It has a specific gravity of 1.25; a very penetrating iodine odor; is miscible with glycerine in any proportion and is very soluble in alcohol (both the mixture and solution are very irritant).

It is administered hypodermatically in saturated aqueous solution, which is both the least irritant and most active and is free from serious local or general reaction. In the usual dosage of 5 to 10 c.c. intramuscularly, if injected slowly, neither pain nor induration should be produced.

The report from the research laboratory of the New York Board of Health states that in dilution of .001 it is a very powerful germicide, excelling phenol and bichloride and is very satisfactory as to erosive action on mucous membrane and epithelium.

It may be used pure in pus cavities; applied to ulcers, or to infected wounds without danger. It causes very moderate smarting and is a powerful and lasting analgesic.

The male urethra is very intolerant to this substance, but the female genital tract tolerates it exceedingly well.

The time allotted prevents the presentation of any theory to explain the almost instantaneous relief, but the similarity of the formula of this substance to that of the recently discovered iodindoxyl, active and non-toxic constituent of the thyroid, suggests that hereon may a plasible biological theory be founded. In attempting to condense into thirty minutes a narrative of twenty years' experience in a practically untrodden field, the writer finds himself confronting a very difficult proposition.

While the use of iodine as an antiseptic is now well known, its value internally is almost unsuspected and its use hindered by wrong teachings as to its therapeutical properties.

The results achieved with iodine in the Rotunda Hospital, Dublin; the thyroid researches of Victor Horsley, and the discovery of thyroidine by Bauman, confirmed my conviction that iodine was a very potent factor in the neutralization of systematic toxemias.

Finding all the pharmaceutical preparations of iodine, hypodermatically, very irritant; or, if not irritant, inactive, I was compelled to strike off the beaten path; finding the compound (to which I gave the name IODAL under a mistaken idea of its chemical composition) was free from local or constitutional ill effects, even in much larger dosage than necessary to get its full curative effects.

In all cases enumerated in this series no other treatment than iodal was used, except where such other is specified. All the cases were complete clinical cures except the one fatality. The full number of treatments administered are stated in each case.

There were no sequelae in any case except slight muscular weakness in muscles of affected limbs, such as follows recovery after other treatment and certainly not more marked or prolonged.

In the diphtheria cases, although four of my six cases were very severe, there was not the slightest trace of nervous or nephritic sequelae in any of the cases.

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* Read before the Long Island Medical College Alumni, December 13th, 1915.

Throughout this paper the name IODAL, mistakenly given to this substance by me under a misapprehension as to its chemical composition, will be retained for convenience.

Septic Infections Treated with TRICHLORACETYLDIPHENOLDIIODIDE.

A resume of the cases treated at the Central and Neurological Hospital, Blackwell's Island, during the incumbency of Dr. B. P. Stivelman, and furnished me by him, are summarized in the following:

Total number of surgical cases, twenty-three, *viz.:*

Deep cellulitis of lower extremity,—four. Of these four cases, one was complicated with perforating ulcer of foot, and another with empyema of knee joint and erysipelas of same limb. All of the above recovered, the infected knee with unimpaired function.

Facial Erysipelas,—nineteen cases. There were three deaths among these nineteen. Of the fatal cases, one had a bad endomyocarditis previous to admission; another was in exceedingly bad shape when admitted and died within thirty-six hours of entry; the third was probably a case of meningeal involvement.

All of the twenty-three cases had temperatures of 102 or over, with two exceptions. In all the cases treated by iodal, but two, there was a reduction of two or more degrees of temperature within twenty-four hours of first treatment.

The youngest of these twenty-three patients was fifty-seven years old, and four were eighty years or over. There was no other antiseptic or internal treatment used in these cases than iodal. Dr. Stivelman informed me verbally that the mortality previous to the introduction of this treatment, in this institution, exceeded ninety per cent for the same class of cases.

Of the above cases the writer saw only three. One was deep cellulitis of right lower extremity. Seen on Friday, the limb was greatly swollen from toes to trunk with typical redness, temperature 102; patient in typhoid condition. When seen again on Monday, limb was normal in size and color, with the exception of a small reddened spot about 5 cm. on front of thigh; temperature normal, mentality normal. Limb could be freely and painlessly used.

In an adjoining bed an aged man presented a typical severe case of facial erysipelas. He was in a semi-conscious condition. This case was seen on the same day. On Monday this patient was apparently normal and able to get up.

The third case was a female chronic epileptic in poor physical condition. The knee, thigh and leg were greatly swollen and reddened. There was an opening anteriorly, just below the lower border of the patella, from which pressure applied at any point, anteriorly, posteriorly, superiorly or inferiorly, would cause pus to exude. The edges of the wound were glazed and everted. Two days later, limb and knee were normal in size; edges of opening healthy looking and no pus could be expressed, nor was there any on gauze withdrawn from wound. Complete recovery with unimpaired joint function was rapid.

My own cases numbered forty-two, *viz.:*

Liquor Dealer, alcoholic, age 57. Had wounded thumb, breaking open a lobster claw. Was called three days later; hand and part of forearm swollen, red and painful; trochlear and axillary glands tender; temperature 100; 3 c.c. injection. Following morning swelling had extended to middle of upper arm; temperature 101; two injections of 3 c.c. each were administered, one at 9 a. m. and one at 8 p. m. The following morning swelling had involved entire limb; temp. 101.5. One injection 3 c.c. was given at 8 a. m. and a consultant called in (symptoms of delirium were now first noticed, the patient persistently mistaking a bunch of absorbent cotton for a kitten). By advice of consultant free incisions were made (thin pus) and hot bichloride fomentations applied and injections were suspended twenty-four hours. Delirium rapidly became acute and appropriate treatment was begun at midnight. On the fifth day the swelling had involved the entire limb and shoulder; injections were resumed in 10 c.c. dosage twice daily. Swelling, pain and redness began to diminish and in two days the limb was nearly normal; temperature fell to 99, rose to 101, and remained at this figure till death on 10th day. This patient had been treated by me for two attacks of delirium tremens previously and had two other attacks. He had been drinking very heavily just previous to the injury and I had warned him of the imminence of another attack.

Foreman Baker; age 29. Hand cut opening a can. I was called in six days later. Patient had been treated for three days previously by hot bichloride fomentations. Found entire arm and forearm greatly enlarged, reddened and very painful; temp. 102.4. Injected 5 c.c. at 7 p. m. Next morning, no pain; temp. 99; swelling somewhat diminished. Detected fluctuation about four inches above wrist; opened and evacuated a large quantity of pus; washed out with drachm to pint solution. Next day temperature normal; patient resumed work four days later. Weakness of muscles persisted for about three weeks but finally cleared up completely without further treatment.

Bartender; age 28. Hand cut with carving knife; called five days later; entire arm and forearm swollen and reddened. Intense pain; temperature 102.4. Five c.c. injected in shoulder muscles at 9 a. m.; following morning temp. normal; had slept well all night; swelling and redness markedly reduced; injection repeated. Returned to work four days later.

Foreman of Lumber Camp; age 34. Had three abrasions on back of right hand and a small ragged wound of thumb; arm greatly swollen and reddened to shoulder; suffering intensely and had to take whiskey. Hand and fingers black. I injected 5 c.c. and applied wet iodal dressing to hand (Friday); saw nothing more of patient until Thursday following, when he again called at my office. A small thenar abscess was opened and dressed. He informed me that he felt so much better a few hours after first treatment that he had driven the thirty odd miles back to camp. Arm and hand, with the exception of the abscess, were normal.

Brakeman; age 36. Had fallen from top of box car and sustained a fracture of right femur and an extensive and deep laceration of left foot. The accident had happened nine days previously to my being called into consultation by Dr. Doyle. The left foot, leg and thigh were swollen to trunk. The edges of wound were glazed, dry and swollen. Temp. 100.9; pulse rapid and feeble. Patient was semiconscious, groaning and picking bed clothes. He could be aroused for a moment, but would immediately resume his former condition. I injected 10 c.c. and wound was thoroughly washed out with solution, drachm 1 to pint, and stuffed with gauze saturated with same (Thursday 3 p. m.). At 11 a. m., Friday, temp., 99; swelling greatly diminished; patient had slept well during the night. Mental condition normal; 5 c.c. was injected and wound redressed as before. There was very little pus on gauze removed; edges had subsided and the whole appearance of the wound was much improved. Saturday temp., 99; limb normal in size; no pus on dressings removed. Wound was redressed and directions left to continue dressings. No injection was given. Dr. Frank P. Doyle informed me later that there was no further trouble and that the further progress of fracture was at least up to normal. In all the foregoing cases microscopical examination revealed the presence of streptococci, as also in the puerperal cases.

Plasterer; age 27. Came to office with incised wound of thumb. Swelling and redness to middle of forearm. Axillary glands painful as was the arm. Injected 5 c.c. and applied wet dressings of solution to wound. Next morning patient informed me he had slept well and was free from pain all night. Next day (Saturday) all swelling subsided; wound closed. Returned to work Tuesday.

Housewife; age 49. Alcoholic, morphine addict, arthritis-deformans. Three abrasions on forearm. Scalded with hot soup three days previous to my being called in. Typical superficial erysipelas. Directed use of hot fomentations of ten per cent carbolic acid. Called three days later and found patient had used ninety per cent carbolic acid on forearm. Arm was greatly swollen and seemed disposed to point about three inches below the elbow, but I could not detect fluctuation. The redness and swelling had extended to within four inches of shoulder. Gave injection m.m. 30, as patient resisted. This was all I could succeed in giving. Directed painting of arm with icthyol and glycerine—equal parts. Next day patient was free from pain; swelling of arm almost entirely subsided, but superficial erysipelas was still present. A day later the patient had entirely recovered from all except the local effect of the carbolic acid. One year later this same patient had an exactly similar accident, followed by erysipelas. However, I saw her on first day of its appearance and all symptoms disappeared after one treatment of wounds with solution, and painting affected area with iodal M.XL to the ounce of vaseline.

American Treasurer; age 38. Had been bitten through nail of middle finger of right hand by a cat. Called in six days later. Arm involved to shoulder. Suffering excruciating pain. Injection of 5 c.c. at 11 a. m. Sunday. Called again at 8 p. m. and found patient quite comfortable; pain having ceased completely within two hours after treatment. Swelling and redness noticeably diminished; patient returned to work Tuesday.

As the rest of this series of cases required but one treatment and gave quite as satisfactory results, repetition would be useless. In several cases, not included in above, commencing infection has been arrested by local applications to wound. Instance: Butcher; German; age 37; incised wound of thumb by meat cutting knife; wound closed. Thumb slightly swollen; pain extending to shoulder; tenderness of glands in elbow and axilla. Wound re-opened and thoroughly washed out with saturated solution of iodal, and wet dressings of same applied. Next morning, no pain or tenderness and no swelling.

Post Puerperal Infections.

Primipara; age 23. Confined by me at 5 p. m. Delivered of a dead macerated foetus, followed by a healthy living child. Story of a severe fall—striking the corner of a table; occurring about three months previously. Received a hurry call at 4 a. m. next morning. On responding was confronted with a typical case of fulminating puerperal sepsis; temperature 102, severe prostration, legs drawn up, extreme abdominal tenderness. Pulse rapid and irregular. Gave uterine irrigation two quarts (Dr. 1 to pint) and injected 5 c.c. saturated solution in abdominal muscles. Called at 5 p. m. same day; temp. 100; pulse much better, abdominal tenderness slight. Repeated douche. Called 9 a. m. next day; temp. normal, abdominal tenderness none. Patient wanted to know if she could be allowed beefsteak as she was very hungry. The rest of the puerperium was normal.

There was two moderately severe cases of infection following abortions (one probably was criminal). Irrigation with blunt curette, lightly scrubbing dr. 1 to pint solution and 5 c.c. injection. Following day each case temperature was normal. Neither required further treatment.

Married; Multipara, age 38. Consultation case. Infection fifth day after confinement. This case was a typical case of post partum sepsis. Under same treatment as the last cases the same results was achieved and the normal puerperium was resumed in twenty-four hours.

CHANCROIDAL BUBO, 74 cases.

Fluctuation was present in sixty-eight when first seen. All of these were treated by puncture with a small trochar and canula (size 6 catheter, English); expressing pus, protecting skin with vaseline, and injecting enough iodal to thoroughly fill cavity; allowing excess to reflux on absorbent cotton held in place by plaster. A large number of these cases were treated in my office and all of them were able to walk out and reach their homes unaided. Those treated in bed were, without exception, able to come to my office for treatment the following day and to attend to business next day. Three cases were aborted by intrainjections, but as this procedure was much more painful and disabling than treatment as above, it was not encouraged.

Two cases suppurating gonorhoeal bubo were treated as above, but proved very tedious and the treatment did not excel in these two cases.

One case of chancroidal bubo which had opened spontaneously several days previously, leaving a large ulcerated surface, promptly began to granulate under liberal application of iodal and dusting with bismuth iodosalicylate and left a surprisingly small cicatrix. Two others which had just opened spontaneously were treated through the small openings. In these the result was practically the same as where opened artifically.

Chancroid. A very large number were treated. Among them was that rara avis, chancroid of scalp (Bacillus Ducrey) Auto infection, transferred from penile chancroid. The results were very satisfactory. Immediate abolition of soreness; complete healing five to fourteen days. Mixed sores promptly took on pure specific characteristics; so much so that the treatment was diagnostic.

When phymosis was present, irrigation with saturated solution for ten minutes, praeputially using a 4 oz. politzer bag, invariably enabled reduction to be accomplished without trouble next day.

One case of phagedoena was promptly checked. Routine treatment was daily free applications of pure iodal and dusting with bismuth iodosalicylate.

DIPHTHERIA, 7 cases.

Of these, six were my own, and one was treated by Drs. W. A. P. Ternan and E. P. Morton. The latter case was reported to me by Dr. Ternan as putrid sore throat; patient, male; age 14. This case required one treatment (5 c.c.) a day for five consecutive days; at the end of which time the patient had entirely recovered.

Six cases were treated by me. Of these, one was a consultation case, seen on 10th day. Case seemingly hopeless; buff colored membrane; sweetish smell to breath. Seen twenty-six hours later; patient wanted to get up and have a good meal (Sunday). I did not see patient again, but Dr. W. F. Smith, who had called me in, informed me several days later that the patient had had a slight recurrence of membrane on the Tuesday following, but that it had disappeared under local applications of iodal solution. Patient returned to work on Friday of same week; cultures negative.

There were two cases in a family of four children. One female, 11 years; temperature 101, buff colored membrane, sweetish smell to breath, pulse rapid but regular. Glands of neck greatly enlarged. Given one injection at 5 p. m. and throat swabbed with saturated solution. Her sister, two and one-half years; temperature 102, pulse 115. Whitish membrane, but croupy cough. Injected at same time. Next day elder patient's temperature was 99; swelling of neck subsided completely; membrane separating in large pieces; wanted to get out of bed. Younger child's temperature was normal, pulse 88, no membrane or cough. Cultures taken on this day negative in elder girl's case, and positive in the younger's; next day, both positive. Two days later they were both negative and so continued. Two other children in same family; one of whom had a temperature 99.5 and duskiness of throat. Under solution by atomizer to throat patient never developed further symptoms.

The other two cases were both female patients; one four years, and the other five years old. Both were ordinary cases of clinical diphtheria. One injection was given in each case. Cultures were negative respectively in two and four days. Both patients were allowed to rise on second day following treatment.

In all these cases Klebs Loeffer bacillus was present. In the diphtheria cases, as in the septic cases, there was the same almost immediate fall of temperature, as well as rapid return to normal in other respects.

IODAL AS A SURGICAL ANTISEPTIC.

The writer began to use iodal solution as an antiseptic in operations in 1898 and never had a single case of infection. To illustrate its efficiency: I had two cases of chancroid, both curiously enough, in marine engineer officers. They both absolutely refused to remain for treatment beyond two days. In one case there was a corona of chancroids on prepuce; in the other one fairly large preputial chancroid anterior margin of prepuce. I circumcised one, and excised the lesion in No. 2. The only antiseptic used was iodal saturated solution and wet dressing of same. Four weeks later I saw No. 1 with a perfect result. I did not see No. 2 for several months. He informed me the wound had healed without trouble.

I wish to tender my most sincere thanks, to Dr. V. Sorapure, M. R. C. S. & L. R. C. P. and the members of the medical and surgical staff, of the Central Neurological Hostital, Blackwell's Island, N. Y., for their kind co-operation and assistance.

ADDENDA.

Partial report on the observation made of the effect of Iodal (Trichloracetyldiphenoldiiodide) on septic and infectious cases with history of cases, Central and Neurological Hospital, Blackwell's Island, N. Y., March 10, 1916:

Case 1: J. C., male, aged 68. Admitted January; temperature 101, pulse 100. Physical examination showed local infection of nose, multiple necrotic foci involvement of subcutaneous tissue; diagnosis—"Carbuncle." Crucial incision, Jan. 31st, failed to arrest extension of infection towards antrum and frontal sinuses. Feb. 8th, iodal was used full strength, thoroughly swabbing entire cavity and repeated on alternate days. Almost immediate cessation of pain; patient stating he had the first comfortable day since the infection started. Cessation of the extension and subsidence of swelling was simultaneously apparent. Clinical cure Feb. 20; patient discharged Feb. 23d.

Case 2: M. K., female, aged 84. Admitted to surgical ward Feb. 11, 1916. Diagnosis—Carbuncle of neck; temp. 102.4; pulse 96. Very cachectic appearance; severe pain; heart normal; lungs fairly good; arteries markedly hardened; urine showed traces of albumen and sugar. Very large area covering entire back of neck involved. Treatment: Pure iodal was injected into each necrotic area down to base, 3-5 minims in each focus and wet dressing of saturated solution of iodal applied on first day; next day the wet dressing only was applied. Thereafter the cavity was swabbed every other day with pure iodal. Pain was relieved in about two hours after first treatment. Diminution of swelling was rapid, as was separation of sloughs. Lesion healed and wound closed March 6th. (Patient remained in hospital to be fed up a little.) This patient has just recovered from an attack of facial erysipelas, coming on three days after subsidence of the carbuncle. Treated by iodal.

Case 3: J. McC., male, aged 48. Admitted to hospital Aug. 18, 1915. Provisional diagnosis—infected jaw (left). Physical examination—large hard mass with central small sinus; no complications. Sinus was enlarged and curretted without result. Sinus continued to enlarge with proportional increase of discharge. Dec. 5, 1915, a piece of tissue was removed and examined microscopically by Dr. Cornwall. Diagnosis—basal cell epithelioma. There was rapid infiltration of cervical glands and discharge became very offensive. After awakening one morning patient was unable to move left arm and leg; apparently due to infiltration of cord; pain was severe and constant until time of beginning iodal treatment. Entire lower part of mandible had disappeared. Feb. 17th, on Dr. Wallace's suggestion, iodal was applied pure to entire accessible diseased surface daily. Result—pain markedly ameliorated by, and since, first application. The wound is much cleaner now and progress of the disease is noticeably slower.

Case 4: E. V., male, aged 82. Admitted Jan. 12, 1916. Diagnosis—haematuria. Physical examination revealed carcinoma of prostate and V. B. and a number of prostatic calculi. Operated on suprapubic cystotomy with permanent drainage through abdominal wound. Feb. 23d, chill followed by temp. rise to 102.8. On morning of Feb. 24, patient had well defined area of redness over right side of face from median line. Diagnosis—erysipelas facialis. Local application of pure iodal and saturated solution as wet dressing. Same treatment on next two days; temperature fell the second day; swelling disappeared on third day.

Case 5: E. C., female, aged 66. Admitted to surgical ward Feb. 21st. Diagnosis—cellulitis of leg. Physical examination—chronic myocardial degeneration; chronic nephritis and marked arterial sclerosis. Treatment—iodal locally and 5 c.c. of solution hypodermatically repeated daily till patient died Feb. 27th. Observation—pain ceased and extension of infection was arrested. Patient died of hypostatic pneumonia; had very feeble resistance ab initio.

Case 6: A. McD., female, aged 68. Incurable Hemiplegia. While in hospital developed cellulitis of leg. Examination disclosed deep cellular involvement rapidly extending upward. First noticed Feb. 19, 1916. Treated with iodal; painted over surface affected, and 5 c.c. saturated solution by hypodermic into limb somewhat above margin of affected area. Repeated on three consecutive days. By the fourth day inflammation had disappeared and swelling completely subsided.

Case 7: M. J., male, aged 67. Admitted to surgical division Feb. 23d. Examination same day and diagnosed as suppurative arthritis of middle finger. Incised at three points and drainage established with little amelioration of symptoms. Treatment by iodal locally and hypodermatically begun Feb. 25th. There was immediate diminution of pain and great reduction of swelling; temperature fell to normal on second day. Patient is recovering rapidly.

We now have a series of leg ulcer cases of all types and in patients of ages varying from 55 to 85 years and of a duration varying from 2 to 15 years, under treatment by iodal, which will be reported in full after more extended observation. So far they are all improving greatly. One of the most noticeable and satisfactory effects of the treatment is the rapid and persistent analgesic effect of the iodal in each and every case. Another remarkable effect is the clean surface that results from iodal in the most persistently discharging areas.

LOUIS LAUNER, M.D.,
House Surgeon.

Dear Dr. Wallace:

As promised I am herewith enclosing the necessary data and information about the treatment of erysipelas cases with iodal.

Yours cordially,
M. HORNSTEIN, M.D.

Report of cases of erysipelas treated with iodal at Central-Neurological Hospital, Blackwell's Island, New York, March 10, 1916:

Case 1: A. G., female, 70. Admitted Feb. 16, 1916. Erysipelas of face; no complications. Five c.c. of iodal given and local application of 1-8 solution used, as per accompanying chart. Patient well and discharged.

Case 2: B. G. F., age 65. Admitted Feb. 15, 1916. Erysipelas of face. Chronic Myocardial Degeneration. Treatment as indicated on chart. Patient died.

Case 3: L. P., female, age 61. Admitted Jan. 31, 1916. Diagn. of Ulceration of leg. On Feb. 5, 1916, diagnosed as erysipelas of leg. Began treatment of iodal on Feb. 15, 1916. Condition of patient poor. Infection extended above the knee. Treated with iodal until Feb. 22, 1916. Condition cleared up. Was transferred to ulcer ward for treatment of ulcer. On Feb. 25, 1916 developed facial erysipelas. Succumbed. Patient's condition was complicated by chronic myocarditis and emphyzema. See accompanying chart.

Case 4: H. D., female, age 69. Admitted Feb. 16, 1916. Erysipelas of face. Treatment of iodal began on Feb. 17, 1916; given as indicated on chart. Patient well. During the course patient had ulceration on face and abscess of eyelids. Face clear at present.

Case 5: A. D., female, 59. Admitted Feb. 15, 1916. Erysipelas of face. Treatment instituted Feb. 16, 1916, for six successive days. Patient had ulceration on face and purulent discharge from both eyes. At present patient is well. See accompanying chart.

Case 6: M. O'T., female, 55. Admitted March 7, 1916. Erysipelas of face. Iodal given as indicated on chart. Patient is well. Checked progress of disease and arrested the extension.

M. HORNSTEIN, M.D.,
House Physician.

A PLAN FOR COMPULSORY SICKNESS INSURANCE.*

O. V. Huffman, M.D.,

Brooklyn—New York.

WHEN Dr. Lewis kindly asked me to come here and address you on the subject of compulsory sickness insurance, I accepted with alacrity, not so much because I had a definite plan which I wished to put before you as because I wished the pleasure of meeting you. A serious situation in regard to the economics of medical practice is at hand; and it is only by intelligent and united effort that we can hope to right matters. Already in eleven European countries compulsory sickness insurance has been introduced and at the present moment there is a bill before our state legislature to provide sickness insurance for all wage earners. This bill has imported the bad features of both the British and the German plans. It fails to provide adequate compensation for medical services and leaves this question in a muddle between the State Official and the Insurance Companies, and, if it were put in operation, it would not improve the public welfare or the medical profession any more than if cheap lodge practice should become the general thing. This subject of compulsory sickness insurance is a very big one and I believe the only way in which we can see it best is to divest ourselves, for the moment, of all our time fostered ideas of how medicine should be practiced on its economic side. Let us imagine that there are no doctors in Brooklyn and that the state wishes to provide medical services, under compulsory sickness insurance, for all the inhabitants of Brooklyn. Would not the first question be, how many doctors are needed? The answer to this question must be made up from the answers to two other questions, which are, what is the daily average percentage of sickness and disability, or, in other words, how many patients are there each day and how many patients on the average can a doctor properly look after each day? In answer to the first question we have nothing definite, but from insurance company data and surveys conducted elsewhere, we are safe in saying that 2.5 per cent of the population is, as a daily average, sick or disabled. In Brooklyn, then, we have about 50,000 patients a day. In answer to the second question, I find on careful investigation that a doctor alone, that is, without any assistants, cannot *properly* care for more than sixteen patients in eight working hours. Of course an organized staff can look after more than sixteen patients, but not more than sixteen patients for each member of that staff. From these two answers, then, namely, 50,000 patients a day and sixteen a day for each doctor, we get the answer to the original question and we can say that 3,125 doctors would be needed.

Now that we have freed our minds from all thought of the present custom, let us ask ourselves how these doctors should be paid. We must have an arrangement whereby a patient may choose his doctor and the doctor retain the right to refuse a patient. This matter of choice has worked out very well under the British Act. We must see that the doctors are paid in proportion to their service. This could be done best by turning over to the doctor a fee for each person who chose him under the compulsory insurance. Now if the 2,000,000 persons in Brooklyn had to pay a head tax of $2 under a compulsory insurance law and this were turned over to the doctor the insured chose to look after him, it would mean that these 3,125 doctors would receive more than an average of $1,200 a year, which is conceded, I believe, to be the average income of doctors in Brooklyn. I don't say that the head tax, or capitation fee, should be so small as $2.00. I select this figure simply to show that it is sufficient to meet the present aggregate annual income of the medical profession and yet allow the number of doctors to be increased by 1,000 over the present number. For the sake of perspective I have asked you to consider the whole population of Brooklyn and its entire medical profession as coming under a compulsory insurance for providing medical services. As a matter of fact it is only proposed to bring wage earners, that is persons with annual incomes of less than $1,200, under the operation of such a law. You will readily see that it would be much better to include both wage earners and their dependents and to make the capitation fee sufficiently large to take care of the medical profession and yet leave it free to augment its income by charging fees, as at present, to all whose incomes exceed $1,200 a year.

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* Read at the Annual Banquet of the Kings County Hospital Alumni Association at the Montauk Club, Brooklyn, February 26, 1916.

This plan does seem fantastic and I know that some of you conjure up a picture of doctors being bothered to death with needless calls under such a plan. However, the experience in Leipsic shows that the daily office and house visits are less than one per cent among the insured. On the basis of the Leipsic experience a doctor could carry a panel of 2,000 insured. Right here in Brooklyn there is an industrial firm that asks one doctor to look after the sick and injured among 5,000 employes, to see on an average fifty-eight patients per day and to make an average of eight house visits a day. This you will see is about three times too much for one doctor and amounts to a little more than one per cent because some of the employe's families are included. This doctor is working for $200 a month. Wouldn't he be better off in every way if he had only 2,000 employes to look after at $2 a head? You will see that both from the Leipsic and this Brooklyn experience there is nothing to fear on the score of unnecessary calls. Again I would remind you that in the Army and Navy the doctors are not bothered needlessly even when they are at posts where they are obliged to care for civilians.

The weak point in the British Act and in the Welfare Insurance in this country as well as in the proposed Health Insurance Bill at Albany is that cash benefits are given and thus a premium is put on sickness and it is a fact that the malingerers and bad element try to coerce the doctor into certifying that they are sick and entitled to the cash benefits. I believe that here in America we should improve on the European method and dissociate cash benefits from the provision of medical service under compulsory sickness insurance.

Such a plan as this would be a great boon to preventive medicine. The doctor would once more be a teacher, teaching his clientele how to live.

SYPHILITIC OSTEOCHONDRITIS.

J. R. Losee, M.D.,
Brooklyn-New York.

OSTEOCHONDRITIS is one of the most characteristic lesions of congenital syphilis occurring in the early weeks of life. It is known clinically as pseudoparalysis on account of the listless and

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* Presented before the Brooklyn Pathological Society, Jan. 14, 1915.

motionless attitude which the infant assumes. The lesion is observed at the junction of the diaphysis and the epiphysis of nearly all the long bones. The structures most commonly involved are the lower extremities of the femora, upper extremities of the humeri and the ribs; however, in some cases all the long bones show lesions typical of the various stages of the disease. Inasmuch as the loss of function of the extremities is the most important symptom there was considerable difference of opinion as to the location of the lesion. Pollak and Zappert on the one hand believed that it was due to a lesion of the central nervous system or of the peripheral nerves, while Parrot considered that the inflammatory process which he constantly observed in these cases at the epiphyseal junction was the direct cause of the symptoms. This latter view has since been confirmed by more recent observers.

In 1899 Gilbert stated that syphilitic osteochondritis occurred in about five per cent of all cases of congenital syphilis. Fabre & Rhenter in a later article published the results of sixty-seven autopsies on the new born and found thirty-one cases of osteichondritis in forty cases which gave a definite or very probable history of syphilis. Of twenty-seven cases from whom no specific history was obtained three showed positive signs of osteochondritis and two were doubtful. The disease is generally observed before the fourth month of life but cases have been reported as occurring later.

The lesion of osteochondritis is valuable in making a pathological diagnosis of congenital syphilis in those fetuses which are so macerated that a careful examination of the viscera is impossible. In examining the epiphyseal junction for this condition it is well to observe different areas as the change may be noted in one area and not in the adjoining. The pathological condition is less marked in the bone the longer the child has lived.

Wegner distinguished three stages of osteochondritis:

1. Instead of the normal, straight, narrow, white line of calcifica-cation at the junction of the epiphysis and diaphysis there is a wide, irregular yellow line which extends into the neighboring layer of cartilage. At times this change is not observed on macroscopical examination but microscopically the irregular broadened zone of calcification is readily made out.

2. The calcification zone is broader, more friable and the zone of cartilage may be either enlarged or diminished.

3. The epiphysis as a whole may become thickened and enlarged. There is an area of soft yellow granulation tissue 3-4 mm. broad between the calcification zone and the bone.

In very severe cases when the epiphysis separates spontaneously from the diaphysis the fracture surface is irregular and rough, whereas in the normal separation of the epiphysis the fracture surface is smooth. Sometimes this condition has to be differentiated from rickets in which there is a very small amount of calcium salts present. Bartarelli in studying the bacteriology of these lesions has observed spirochetae pallida in the epiphysis, periosteum and capsule of the joint.

The chief symptom of the disease is the loss of function of one or more of the extremities. The articulations are swollen, painful and in extreme cases the epiphyses are separated from the diaphyses. When the wrist joint is the site of the disease deformity is generally present. Symmetrical joints are often involved and the patient assumes a flaccid attitude. This condition is not readily recognized when other manifestations of syphilis are not present and thus it progresses without treatment until further symptoms develop. However, when skin lesions, snuffles, enlargement of liver and spleen and definite history accompanying the paralysis the diagnosis is somewhat simplified. The Wassermann reaction on the mother and baby is very often of valuable assistance in arriving at a diagnosis. At times it is necessary to differentiate pseudo-paralysis from lesions of the central nervous system, Erbs Paralysis, and diseases of nutrition.

The prognosis of this condition depends on early diagnosis and prompt treatment. If the treatment is delayed until definite symptoms make their appearance death may intervene on account of the extent of the visceral lesions. Under specific treatment repair takes place rapidly and the separated epiphysis unites firmly with the diaphysis, if maintained in good position. Occasionally after recovery there is a slight lengthening of the bone; otherwise there is no sign of the former lesion whatever.

The following is a report of a case which occurred in the Out-Patient Department of the Lying-in Hospital service and may be classified according to the third stage of the disease. The infant at birth was a full term, well developed male child that did well up to the third day. At this time it was noticed that the patient made no attempt at moving its extremities but continued to lie quietly in the same position. Later a fracture of the upper extremity of the right humerus was observed and the same condition was present at the lower extremity of the right femur. There were no other symptoms or physical signs of syphilis present and death occurred on the 8th day.

At autopsy the epiphysis of the right humerus was entirely separated from the diaphysis and the fracture surface was irregular and rough. The epiphyseal line of the left humerus was broad and irregular showing an increase in the calcification zone. At the lower extremities of both femora the epiphyses were hypertrophied, the periosteum and capsule of the knee joint were thickened. On section there was a distinct yellow zone of granulation tissue 3 mm. broad between the epiphysis and diaphysis and the edge of the calcification zone projected irregularly into the cartilage. The epiphysis of the right femur was separated from the diaphysis and it was held in position by the periosteum. Spirochetae pallida were found in the lesions of the femora and section of all the long bones showed Wegner's sign. The liver, spleen, pancreas and kidneys were increased in size, of firm consistency and microscopically the changes commonly found in congenital syphilis were observed.

The mother of the baby was a Para V, thirty-five years old and apparently in good health. Two children are living and well, one died at one and one-half and the other at two years of age. The Wassermann reaction on the father was negative and that on the mother was strongly positive.

CONCLUSIONS. 1. Osteochondritis is more often a complication of congenital syphilis than is generally anticipated.

2. In all cases of paralysis of the new born, syphilis should be considered so that the diagnosis may be made early without waiting for visible signs of the disease.

3. With early and suitable treatment a good functional result without deformity is usually obtained.

EDITORIAL

THE MILLS BILL.

COMMENT upon the Mills Bill continues to occupy a prominent position on the back sheet of the daily press. We have never been quite certain as to the relative importance that the editorial staff gives to the back sheet but as most people read it second, it may be presumed that it is news of at least secondary note.

The Committee of the American Association for Labor Legislation has thrown all its influence in favor of this particular bill, which it believes is for the best, and which it has succeeded in introducing in New Jersey and Massachusetts and eight other states as well as New York. The main objection to the main draft of the bill we stated in a recent editorial to be the lack of provisions for safeguarding the interests of the physicians and for insuring good medical attention to the working men. It is with some surprise that one notes the attitude of Mr. Ralph M. Easley, Chairman of the Executive Council of the National Civic Federation, upon this very subject. A report of a recent address on the subject contains the statement that this is an effort to force a system of compulsory health insurance upon the wage earners of this country and stigmatizes it as one that would benefit the doctors and be unfair to wage earners. "Has health insurance in the United States become mainly a scheme to promote the fortunes of the medical profession?" Mr. Easley asks. In so far as the bill provides that working men *must* put aside something for time of sickness, this does benefit the medical profession. At present the working man and his children have money to spend for the movies, champagne colored shoes, cheap candy and wasteful expenditures of all kinds and they have the cheap lodge doctors and the dispensary to fall back upon in time of trouble. There is *no* reason why it should be the physician who is called upon to give free treatment when there is so much money to spend on frivolities, but we strongly object to Mr. Easley's attitude if he is correctly reported as saying that this bill favors the medical profession. A careful reading of the draft before us fails to show how the profession as a whole is to be cared for unless some specific modifications are made in its present terms. It has been drafted to provide not only medical attendance and nursing, but a sick benefit as well. Nowhere in the bill, however, do we find any suggestion as to how the working man is to be safeguarded in obtaining the better sort of medical attendance. It is generally recognized that all physicians are not on the same educational plane nor are they all actuated by the same desire to give full measure in the service they render. Unless the return to the physician for services under the proposed act gives him an adequate recompense, it may be safely assumed that conditions will remain much as at present and that the working man will still continue to get only the amount of service that the proposed fees will pay for. Under the Workingman's Compensation Act at least one large insurance company has already discovered the fallacy of expecting ten-dollar service for a fifty-cent fee. The number of cases of secondary infection resulting from slapdash treatment by careless physicians has taught them that it is better to pay without question the reasonable, though proportionately large, fees demanded by thoroughly qualified surgeons. If the proposed bill is to bring to workmen a good class of medical attendance and nursing, the first requisite is an adequate return that will attract thoroughly qualified practitioners of medicine and such men cannot be expected to enroll themselves as available for services under the act in competition with the men who are willing to accept twenty-five and fifty-cent fees. The real benefit of the bill will accrue to these men only and conditions will remain practically unchanged.

Another feature that seems thoroughly bad is the guarantee of a sick benefit coincidentally with the free treatment. It is a bait that will appeal to human cupidity and offers serious temptations for collusion between a malignerer and any unscrupulous physician. If a sick benefit is to be paid it must be surrounded by safeguards that the present draft of the bill does not provide.

In this connection the timely address by Dr. Von Huffman printed in another part of the current issue of the Journal deserves careful study.

H. G. W.

FIRST AID.

JUST now "preparedness" is the slogan which has displaced the "uplift" and "efficiency," "economy" and the other short lived fetishes of recent years, for the restless American mind must ever look for some new spice to stimulate its taste. Preparedness just now is too real a need to be treated lightly and has too many subordinate branches to be thoughtlessly dismissed. Preparedness includes not only accumulation of military weapons and ammunitions and the training of men, but the estimation and preparation of commercial resources, transportation, food and all of the thousand and one items that are usually forgotten because regarded as daily matters of course. As a part of this general movement it has been recognized that much preventable illness, especially of the surgical sort, results from failure to provide adequately for the treatment of accidents where they occur. One cannot but be impressed by the comment made by a physician who has had unusual opportunities to study the working of the Workmen's Compensation Law. He commented pointedly on the large number of serious deformities of the upper extremities resulting from minor injuries to the fingers and hands, and stated that it was a matter of chagrin that there were so many men crippled for life whose fingers or hands might have been saved by adequate care in the very beginning. Some of the manufacturing industries have recognized this and have so far met the problem as to reduce permanent disabilities to something under five per cent of all accidents.

First aid to the injured has been taken up independently by a variety of agencies, each of which has endeavored to provide instruction adequate to its own immediate needs. Public instruction in first aid is, for instance, offered by the Volunteer Life Saving Organization; the Police and Fire Department receive instruction in first aid; some railroads have worked up a very complete first aid system, but until recently no uniform teaching has been attempted and no thought has been given toward the standardization of equipment and method. The question was at one time considered as to the wisdom of equipping the Police Department of New York with the standard U. S. Army first aid package, and printed instructions in regard to the care of small wounds and minor injuries actually were issued to the Department. No figures are available that show how far the precautionary measures advised have been effective. The field of first aid is one that promises fruitful results if it can be systematized and broadened and correlated as a part of the general plan of preparedness. H. G. W.

THE RELATION OF MENTAL DEFECTIVES TO CRIME.

THE report of the New York Probation and Protection Association covering the period from October 1st, 1914, to September 30th, 1915, amply bears out a similar report covering investigation of the Massachusetts Penal institutions conducted along similar lines a year or so ago when a survey of women arrested for prostitution revealed the fact that a large number of them were mentally deficient. The present report shows that of 164 cases, 56, or 34 per cent, were found to be feeble minded; 42 girls were committed to institutions because of their mental condition. These independent reports from two of the largest American cities are peculiarly illuminating because of the light they throw upon the problem of public prostitution, a problem which has heretofore been attacked along lines of restraint only. Segregation and regulation have heretofore been the only means considered in dealing with an evil which lies close to the root of the moral and physical health of the country. This revelation of the mental state of so many of the unfortunates who have come under recent scientific observation opens a new field in the attack upon this moral canker. If it can be definitely shown, as now seems likely, that the ranks of prostitutes are largely recruited from among the mentally incompetent, commitment to suitable institutions will prove a powerful weapon for the cure as well as the prevention of the evil. So soon as it is generally understood that mental defectives constitute a considerable proportion of the victims of this hideous trade, progressive municipalities throughout the country may be counted upon to cooperate in a crusade to place them where they belong—in institutions for the treatment of mental diseases—and a long step will be taken in clearing up the organized traffic in women. H. G. W.

CORRESPONDENCE.

Concerning the Report of the Committee on Humanics

Dr. Henry Goodwin Webster,
Editor, Long Island Medical Journal,
364 Washington Avenue,
Brooklyn, New York.

Dear Doctor:

I note with regret the Report of the Committee on Humanics in the March number of the Journal, the preamble of which begins with a quotation from Earl Gray's announcement to the House of Commons on August 4, 1914. The report would have been richer in humanics if instead of quoting Earl Gray, it had quoted Lord Welby, who was once at the head of the Treasury, who held the highest position in the Civil Service of Britain, and was recognized as a great financial authority. In the debate on the Naval Estimates in 1914, Mr. Philip Snowden quoted what Lord Welby had said earlier in that year. It was: "We are in the hands of an organization of crooks. They are politicians, generals, manufacturers of armaments, and journalists. All of them are anxious for unlimited expenditure, and go on inventing scares to terrify the public and to terrify Ministers of the Crown."

Or the Committee on Humanics might have quoted from Mr. Gladstone, who said, at the time England was spending millions for fortifying and arming against France, "We have no adequate idea of the predisposing power which an immense series of measures of preparations for war on our part has in actually begetting war. They familiarize ideas which lose their horrors; they light an inward flame of excitement of which, when it is habitually fed, we lose the consciousness."

The report of the Committee is wrong in its dates. Aug. 4, 1914, was not the critical date with England. The critical dates with England are scattered through two hundred and fifty years of bloody world-conquest, atrocities, and subjugation of alien peoples. The dates upon which India was reduced to peonage, to turn the wealth of the Ganges into the Thames; the dates upon which the American Indians were incited to join in atrocities against our own forefathers; the dates upon which the people of Ireland were murdered by British soldiers for their love of freedom; the dates upon which Sepoys were shot from British cannon and the great works of art of India laid waste to terrorize a benign people; and the dates when the simple Boer farmers' families were destroyed,—these are the critical dates.

It was not Aug. 4, 1914. A British Statesman has been frank enough to state that the critical date was Aug. 2, the day after Sir Edward Gray informed the French Ambassador at London that he would "propose to his colleagues that he should state that it (the British Fleet) will oppose the passage of the Straits of Dover by the German Fleet, or, if the German Fleet should pass through, will oppose any demonstration on the French coasts."

The Committee on Humanics has exceeded the limits of its purpose in entering upon a discussion of militarism. It presents statements, concerning international affairs which are not in the province of the Associated Physicians. Is it fair to say that this country sits complacently by while others plot against the lives of our citizens? Would it not, perhaps, have been more in keeping with humanics to have said that the lives of American citizens are endangered and plotted against by the munition makers of our own country, the armament trust, the manufacturers of war supplies, and their zeal for profits?

Belgium is cited as a victim of unpreparedness; but she was the most prepared nation in Europe. Belgium with but seven and a half million people had an army of 340,000 men, the strongest forts in Europe, and treaties with five great powers which guaranteed military protection. Switzerland is cited as an example of military preparedness; but as a matter of fact her military preparedness is insignificant. From a military standpoint Switzerland could not resist a great European power ten minutes in warfare. It is something else than military preparedness that saves her.

The Committee ominously informs us that, "in the none too distant future belligerent aggresion on the part of one or more of the now contending countries" is to be expected. We are even warned that we may get into this present war. This committee of military experts do not specify which country it is to be; but I am sure that they have not taken into consideration the difficulties of invasion. England today cannot invade Germany, and the distance is only across the English channel. With the mastery of the seas, she tried to invade Turkey, lost 120,000 men and failed utterly. Germany with all her navy available for such an invasion cannot sail a hundred miles up the Baltic and invade Russia. Russia could not invade Japan. Modern methods make naval invasions obsolete. Still they talk blithely of one of these powers coming three thousand miles across the ocean, and invading the greatest and richest country in the world.

They urge medical men to "take active steps in behalf of military preparedness against any aggression," that every member of the Associated Physicians should become directly connected with some active military organization, and that we should talk this sort of thing to our patients.

The committee urges that military training is a good thing. These gentlemen speak academically. They have not had military training. It is a demoralizing and pernicious thing. It does them credit, that they have kept their lives free from it. Still they go on: "We advocate a material increase in the standing army of the United States and likewise of the Navy." They are naval experts too. Suppose this country had a great military equipment such as the armament league wants us to have. Any far-seeing person can predict that it would be responsible for getting us into a war before we had had it very long. The road to war is paved with preparedness.

The committee evidently studied the problem deeply for they recommend the Swiss system. Are they aware that there is no poverty in Switzerland, no slums, and that the people all love their country? Are they aware that in the United States the majority of the people live and die in poverty? Do they not know that the Swiss system requires loyalty and love of a country, and that in the United States so large a proportion of the population are exploited by the rich and that discontent is so rife that such talk is folly?

If we are to have such resolutions let us have a "Committee on Inhumanics" to present them. The onus should not fall upon men who are essentially humane. If the Committee on Humanics would present resolutions on preparedness, they should be resolutions in keeping with humanics. They should be resolutions demanding social and economic conditions such as would mean justice to all people in this country. They should demand the abolition of privilege. They should demand the abolition of child labor, land monopolies, coining the souls of women into gold, the exploitation of the workers by those who now own the tools of trade, and the ruthless sacrificing of the natural resources of the land. That is the only kind of preparedness that is worth while. Love of country is the first requisite for national defense; and love of country cannot be created by coercion, conscription, armaments or force. It is not more guns that we need in this country, but more civilization and more social justice.

The great modern social crime is war. The people of Europe have discovered that military preparedness is its inevitable precursor. They have been fooled and frauded by militarists and diplomats. The powder-makers have told them that powder would prevent war. Now they know it is not true. The social revolt against militarism which will arise in Europe after this war will be as a great moral awakening. And what of the sickening spectacle which our committee invites them to behold? They would have stricken, bleeding, impoverished, war-ridden armament-sick Europe look toward the setting sun, and instead of hope and inspiration, behold this great nation, in the presence of their weakness, perpetuating the engines of war and destruction as never before! They ask us to sacrifice the greatest opportunity a nation ever had in taking a practical stand for world peace! Why do they not quote Lord Roseberry? Only last November he said, "It is a disheartening prospect that the United States, so remote from the European conflict, should voluntarily in these days take up the burden which, after the war, will be found to have broken, or almost broken, our backs."

Only yesterday on the Mexican border a bandit in the presence of the United States Army, came into this country, killed our citizens, freely passed out through our lines and escaped. Our machine guns would not work, pursuit was delayed for several days, the officer in command committed suicide, and general disorganization prevailed. The fact that this raid was to take place was known to the Army thirty-six hours before the raid. A New York press agency had reporters and telegraphers on the way from New York to the scene of the raid, to be ready for the "big story," thirty-six hours before it happened. The money which subsidized the bandit came from the interests in the United States which have been furnishing the funds for similar purposes heretofore in order to get the United States Army into Mexico. Conquest is their aim. The Army, which is supposed to protect us, lends itself to this sort of conspiracy with the high finance, which aims to exploit Mexico; and we may be sure that the financiers behind the scheme are the "patriotic" backers of the bigger army movement. The employers of the thugs who did this deed were the same as hired the thugs to create trouble at Youngstown, Ohio, in the interest of the U. S. Steel Corporation; and the motives are the same.

This country spends $250,000,000 a year on its army and navy (67 per cent of the Nation's income), the largest amount of which goes to four firms; and we have inefficiency. At the beginning of the great war Germany was spending only 55 per cent of her annual income for preparedness. The increase to $750,000,000 annually which is now proposed for military and naval expenses is *forty times more* than the increase by Germany during the five years preceding the war. No wonder Secretary Daniels exclaimed, "If this mad rivalry in military and naval construction goes on the burden will become too heavy for any nation to bear."

Still there is not a suggestion in this report of our own committee of military experts or in the bills before Congress that would purify our military system and secure efficiency. Their demand is for a numerical increase of guns, battleships and soldiers—all to be surrounded by the same system of loot for the big interests as now characterizes our militarism.

The above statements concerning Mexico are susceptible of verification; but the large metropolitan dailies which are promoting militarism, will not advise our committee of the truth. It would reveal too obviously the methods and motives of preparedness.

I esteem the gentlemen of this committee highly. I know them personally and well. They are medical men. They are not militarists. They innocently have been beguiled by the hysteria of fear of war, which is created and fostered by the great interests which profit by it, through the venal subsidized press which they control. These gentlemen have been deceived by that invisible government dominating our national affairs and the press, and which has loaned fabulous sums to the belligerents in their distress at exhorbitant rates, the collecting of the proceeds of which gamble is doubtful unless backed by a show of force. They have been betrayed by the vested interests which desire that this country should enter upon conquests of foreign lands for the sake of their profits. These sordid interests would lead us into war; as they have led our Committee on Humanics into the fear of war and made them their unwitting instruments.

JAMES P. WARBASSE, M.D.

Society Transactions

TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

The 207th Regular Meeting of the Brooklyn Gynecological Society was held in the Medical Library Building on May 7th, 1915.

The Vice-President, Dr. William P. Pool, in the Chair.

Wandering Corpus Luteum of Pregnancy.

Dr. Clarence R. Hyde: This is a specimen of ruptured ectopic gestation in the right tube. On the end of the other tube was found a large body which was thought at first to be a third ovary, but on further inspection, it was found to be yellow inside. The pathologist reports it to be a large corpus luteum of pregnancy, wandering. It is something I have never heard of, or seen before. It was entirely outside the ovary from which it had been extruded, and had fastened itself on the end of the tube.

Unruptured Ectopic Gestation.

Dr. Hyde: This is the earliest specimen of unruptured ectopic I have ever seen. It is not more than three or four weeks old. This patient came in with all the symptoms of an ectopic and with an enlargement on the left side which was found later to be a cystic ovary. It would have been almost impossible to have found this ectopic condition by the touch. The tube has been sectioned and the villi were found by Dr. Murray.

Pott's Disease and Pregnancy.

Dr. Hyde: This specimen is not interesting except for the operation. It was a case of Pott's disease who came into the hospital two and one-half to three months' pregnant. The orthopedic surgeon refused to operate until she was aborted. The method of abortion is new and yet simple. It is a Caesarian section. The incision into the uterus is made across from tube to tube and the gloved finger used to peel out the fetal sac and placenta. The advantage is that when the incision is made across the fundus it is easy to sterilize the patient if necessary or if requested to do so. One point in the technique is that the cervix must be dilated and a gauze strip passed through it, but in dilating do not use a curved dilator, use a straight one. Dr. Davis, of Philadelphia, does not think that Child originated this operation but gives the credit to a German surgeon.

Chorioepithelioma.

Dr. Hyde: This patient came into the hospital with symptoms of ectopic pregnancy. She had missed two periods. When she was received she was in a condition of collapse and showed the appearance of internal hemorrhage, her systolic blood pressure was 60 m.m. and the diastolic 40 m.m. She was placed in the Trendelenburg position, morphinized and then we waited. The next morning the blood pressure had risen to 122 and she was operated upon. The abdomen was found full of blood. The uterus was found to be about the size of a three months' pregnancy and there was a rent one-half inch long on the posterior surface near the insertion of the left tube. This was bleeding rather profusely. We then thought that an attempt had been made to empty the pregnant uterus and that the uterus had been perforated. The patient was in too serious condition to allow a hysterectomy, so the wound in the uterus was sutured, the abdomen closed and the patient put back to bed. Her condition was very bad and she died the next day. This woman could not speak English and when she was dying a visitor, who could speak English, stated that she had been curetted a year previous for a hydatid mole. The autopsy disclosed a chorioepithelioma which had perforated the uterus. There were many metastases in the lungs. There have been but two cases where the uterus has been perforated by chorioepithelioma. In this case had I known of the curettage for a hydatid, I would have been suspicious immediately of a chorioepithelioma, as this pathological condition so often develops after a hydatid mole, and a preoperative diagnosis might have been made.

Bilateral Urinary Calculi.

Dr. Baldwin: Miss M., aged twenty-nine years, first consulted me in 1910, when she gave a history of pain which had been recurring for the previous seven years. Her symptoms were rather characteristic; sudden pains, and mostly on the right side. She had recently had an X-ray picture made which showed the right kidney filled with stones and the organ very much enlarged. The left kidney was less enlarged and had less calculus deposit. After going over the case it seemed that the right kidney was the one which was menacing her life, and catheterizing the kidneys showed that the left kidney was doing all the work of elimination. Despite the fact that the left kidney was affected to some extent we operated and took out the right kidney. It was four times the natural size and was more like a bag of marbles than a kidney. There was a very thin cortex, and I do not remember how many stones there were, but it was just filled. She made a good recovery. The interesting part is that the stones in the other kidney seemed not to be at all affecting her kidney function. A year later she was married, fortunately has not become pregnant, and is able to do everything a wife ought to do. Whether she is doing anything to prevent pregnancy I do not know. She came back two years later having gained about twenty pounds, and at that time another X-ray was made which showed that the remaining kidney seemed to be in as bad condition as the right kidney had been formerly. It became a question whether to remove the stones or not, but we decided to let her go as long as possible, and if we found that she was going down hill we would operate. That was in 1912. Within the last two weeks I have heard that she is well. She uses urotropin constantly, about thirty grains a day. The urine is about one-sixth mucus in volume. It is interesting in this case to note that a woman with kidneys in such a condition could take ether.

Dr. Hyde: In the case mentioned by Dr. Baldwin, there was probably more involvement of the pelvis of the kidney than the parenchyma. The tubules of the kidney are the real functioning part of that organ, and not the pelvis. That is probably the reason why Dr. Baldwin's case did so well, because the tubules with their renal cells were not involved in the pathologic processes present. This could have been easily determined by the phenolsulphophthalein functional test. I have been using this considerably of late employing the Dunning colorimeter instead of the Hellige. After the injection of the phenolsulphophthalein, the urine excreted during the next two hours is collected and its acidity neutralized by 10 c.c. of a 5 per cent solution of sodium hydroxide, and then the color test is applied by the colorimeter. If normal, it should show an index of 60 or over, *i. e.*, the renal cells of the tubules are excreting properly. The function of each kidney may be estimated fairly accurately by ureteral catherization of each kidney and estimating the color index of each sample separately.

Dr. Cary: About a year ago I made a number of tests in cases of various kinds, with phenolsulphophthalein. In general I feel that in cases of arterio-sclerosis with contracted kidney this test gives a good idea of the kidney function. When the test is strong in either direction, light or heavy, it is of value, but medium findings are not so reliable, and in certain conditions it is misleading. Recently I saw a patient in the hospital with Dr. Hussey, who had a condition involving kidney abscess in which the test was misleading and unsatisfactory. This test must be accepted with some reservation especially in surgical conditions.

Dr. Baldwin: I have never tried the test. Here was a woman who was dying. The urine showed that one kidney was trying to maintain life while the other was slowly killing her. No matter what the test had shown I would have removed the kidney.

A Report on Spinal Anaesthesia.

Frank Knight, M.D.

Discussion.

Dr. Gibson: I have not used spinal anaesthesia and am not yet ready to be converted to it. Recently I saw Dr. Babcock, in Philadelphia, operate on three cases with this form of anaesthetic. If I had been operating I would have felt much safer if they had been inhaling ether through an Allis inhaler. However, there are cases in which inhalation anaesthesia is contra-indicated and in which spinal anaesthesia may be used His demonstration is a beautiful one and very interesting. He gives the injections himself and has become very expert. I talked with him afterwards and discussed his mortality. He confessed that at first he had some mortality but that it was due to his using too heavy solutions and in too large doses.

Dr. Holden: Dr. Babcock is a past master in the use of this method. He uses a bit of cotton over the nose to watch the respiration and the patient is given pituitrin to keep the blood pressure up; if the patient sighs he is placed more on the level. Dr. Babcock has done some eight thousand cases, the last two thousand without mortality. When a patient begins to go badly it is quickly and without warning. Dr. Knight speaks of the fact that the men here do not take kindly to spinal anaesthesia; I talked with men in Philadelphia and could not get any to enthuse over it.

Dr. Robertson: In our service at the Kings County Hospital spinal anaesthesia works charmingly in operations below the umbilicus. It has its dangers, however. One old man upon whom it was used, a case of diabetic gangrene of the foot, developed respiratory paralysis, but was revived. In this form of anaesthesia the color of the patient is bad; really you feel uncomfortable to witness it. The respiration is at times sighing, shallow or feeble and stimulation is often required. The method is admirable but needs careful watching. Another disadvantage, and at times a most material one. is that the patient, not being unconscious, hears everything and a word dropped inadvertently being misconstrued causes needleess anxiety.

Dr. Cary: Last summer I met Dr. Babcock in Cleveland and had dinner with him. I asked him if he had difficulty in teaching others his technique. He replied that "at least there are two or three men in the United States who can do it all right." So I judge there are many who cannot.

Dr. Baldwin: The last thing I should like to be considered is a reactionary. I remember in Wood's Therapeutics, which was published twenty-nine years ago, the thing that impressed me was the statement that the deaths in ether anaesthesia were about one in three hundred thousand administrations. I think that is a correct estimate. I confess that it seems to me that the injection into the spinal fluid of anything is more of an operation than the average hemorrhoid operation; more than an amputation of the toe. I should be obliged to Dr. Knight if he can tell us what objection there is to ether. I should like to ask Dr. Holden if he would prefer spinal anaesthesia to ether if the patient was one of his family. I saw Dr. Babcock's demonstration. He seemed to need many assistants; three were needed. I often want to change the position of the patient. It is uncomfortable to work in the Trendelenberg for one operation and then to try to get at the appendix. These patients have morphine to begin with, and perhaps atropine, then they may have ether, and stovain locally, and possibly pituitrin to help the blood pressure. I think the use of spinal anaesthesia is radical.

Dr. Mayne: Rovsing has conducted a series of experiments which have taught an important lesson. He has shown that where operations are performed in the upper abdomen, on the stomach, gall bladder, or near the diaphragm and local anaesthesia is used there is more post-operative pneumonias than under general anaesthesia with ether or chloroform.

Dr. McNamara: I regret that Dr. Knight has not brought this subject up so that we could have a whole evening for the discussion of anaesthesia. I would quite disagree with Dr. Baldwin and Dr. Holden in some parts of their discussion. I have not always had good results with spinal anaesthesia. One case I remember where we had to give general anaesthesia to get relaxation of the abdominal wall.

Dr. Knight: I should like to add one further remark regarding the technique in the use of spinal anaesthesia. In inserting the needle care must be taken not to insert it too far. If the patient complains of pain in the knees or legs you have penetrated the nerves; the needle has gone in too far. You can usually feel when you are against the membrane and a little more force will puncture it, and then will come a portion of fluid. It must never be inserted further than that.

TRANSACTIONS OF THE BROOKLYN PATHOLOGICAL SOCIETY.

Oct. 14, 1915.

The Bacillus of Typhus Exanthematicus Isolated from a Case of Typhus Fever (Brill's Disease).

Dr. S. R. Blatteis and Dr. M. Lederer.

Remarks by Dr. S. R. Blatteis.

The time is still fresh in the minds of all of us, I believe, when an article appeared in the American Journal of the Medical Sciences by Dr. Nathan E. Brill, of Mount Sinai Hospital, describing a series of cases which he had observed in the wards of that institution that had formerly been associated or connected with typhoid fever, but which he, as a result of prolonged observation, decided was a class of cases presenting sufficient differences in clinical and pathological aspects to be entitled to a separate clinical entity; so he gave a very detailed description of it and it has become a classical article.

Other observers soon began to work along the same lines and they referred to this condition as Brill's disease. At the Jewish Hospital, in Brooklyn, Dr. Louria had intuitively felt that he had also seen in his services in the institution some of the cases described by Dr. Brill. He even went back further than that and thought that he recalled cases that he had seen in the hospitals in Moscow which resembled the class of cases described by Dr. Brill. He put two and two together, made his own observations and finally reported cases of what is termed or, rather, was then termed Brill's disease, and he was one of the first to suggest the possible analogy between this type of cases and the type of milder typhus which is seen throughout some portions of Europe, especially European Russia.

Another observer who had had opportunities for studying abroad, Dr. G. A. Freedman, also, apparently independently, made the same observation.

Then American workers began in earnest to study this disease and Anderson and Goldberger, of the Public Hospital Marine Service, began investigations along a somewhat different line, and they saw an analogy between the description of Dr. Brill's cases and cases of Mexican typhus. To prove the analogy they found, first, by experimenting with Mexican typhus, that, if they took the blood of a patient with this disease and inoculated it into monkeys, the monkeys developed a febrile condition. Apparently they were made sick and if the blood of these monkeys was inoculated into other animals it produced an immunity in these animals against Mexican typhus. They then took monkeys that had been inoculated with Mexican typhus and took blood from cases of Brill's disease and found that the blood taken from cases of Brill's disease did not produce any result or any reaction in the animals that had been inoculated with Mexican typhus. A whole series of experiments was conducted and led to the conclusion that Mexican typhus, or Brill's disease, or modified typhus, were analogous, and I remember very well when the experiments were at their height Dr. Goldberger brought two monkeys to the Jewish Hospital, one of which had been inoculated with Mexican typhus blood while the other had not, and one night we took blood from a case of Brill's disease and inoculated both monkeys with this blood with the result that it corresponded with the experiments that they had already made—that an animal injected with Mexican typhus blood is immune to Brill's disease blood and vice versa.

These facts made public, stimulated investigators to determine the etiology of the disease and within a very short time a number of organisms were described as etiological factors, and there wasn't any backwardness at all on the part of research workers to report, one month a certain coccus, another month a bacillus, and soon after spirilla, and then protozoa, so that everybody wanted to be the first to find the cause for the disease and the first thing that appeared to them in their cultures from cases of this type, no matter how apparently it was a contamination, immediately got into print as the etiological factor. It, however, devolved upon a worker in the laboratory of Mount Sinai Hospital to, either accidentally or whether he was born for that purpose—there seems to be a discussion on that question—find that instead of taking blood from an individual sick with typhus fever and running it through culturally the same as we do in our ordinary work, he thought of the plan of making anaerobic cultures. He changed the character of the media which we ordinarily use for our ordinary blood culture work and apparently created an environment favorable to the growth of an organism which he isolated in cases of Brill's disease.

A favorable opportunity presented itself to do this work in studying not only an unlimited number of cases of Brill's disease (he began with 40), but also to study a number of cases of acute typhus fever (European typhus fever) that came into New York after the Balkan Wars, and he studied eleven cases of the real epidemic typhus, the typhus that we find in our textbooks under the synonyms in parenthesis of jail fever, camp fever, etc. In all of these acute epidemic typhus cases the organism was isolated from every case. From the forty-odd cases of Brill's disease the same type of organism was isolated in eighteen cases. He figured out, I think, fifty-three per cent. Now the question is: Is the organism which he described the cause of typhus fever? In order to prove that a long series of experiments was undertaken. It was too big a job for one individual, so three members of the staff of Mount Sinai Hospital were assigned to the work, Dr. Plotz, Dr. Olitzky and Dr. Baehr, and they took up different phases of the question. Dr. Plotz took up the biology of the organisms; Dr. Olitzky took up the complement fixation test and other bodies that might be found in the blood in that disease, and then the three of them combined under the leadership of Dr. Baehr, to make extensive animal experimentation. It is a long and entrancing piece of work; it is a piece of work that certainly must rank as a classic even if it is not confirmed in the course of years. The attempt to do it is at least highly commendable. They met all the requirements that Koch or any other bacteriological investigator made necessary to establish the identity of an organism. It can always be found in the majority of cases of this disease that this organism inoculated into an animal will produce this disease only; that the blood of an individual affected with the disease will re-produce a disease in another animal, and all possible requirements were met with. The serological studies proved the presence of a specific complement fixation body, and they proved not only the presence of that, but also the presence of specific agglutinants and specific precipitants.

A very interesting phase of the subject is the method of conductivity or infectivity, by means of lice. That is a common method of infectivity—the path of infectivity which appears in the literature and which we think of in connection with this disease. They were unable at Mount Sinai Hospital to do much along this line, not because the parasite was not available, I presume, but because it was not practicable, but it has been determined by other observers. It requires a great many lice to bite an individual affected with the disease, and these lice must, en masse, bite another individual before the disease can be reproduced, because one or two lice are not sufficient, for not in many cases are the bacilli present in all stages of the disease. They are present mostly at the time when the temperature is at the highest; they offer this statement in order to explain the fact that the disease is not a very contagious one, because in all the records of the great City of New York there is only one instance where typhus fever occurred in more than one individual in a family.

There are a number of interesting questions in process of solution. One of them is the question of immunization. A vaccine, of course, was the first thing that was thought of. As soon as you have a growth of an organism the first thing you think of nowadays is: Can we not cure the disease by making an emulsion of that organism and using it for curing or preventive purposes? This was done without knowing exactly how it would work. We know that a commission that was on its way to Servia to study the disease, headed by Dr. Zinser, was inoculated with these prophylactic inoculations of the bacillus of typhus exanthematicus and in speaking today with one of the three workers whose names I have mentioned, I asked him the result of the inoculation of the prophylactic inoculations and he said that they could not make any definite statement because it isn't authorized as yet and thev are under orders apparently not to make any definite statement, but he said that in all the cases of individuals who had been inoculated with the typhus bacillus vaccine, that not one of them had developed typhus fever, and the exposure has been very great and constant. Then I asked him, "How does the work in Servia and neighboring countries correspond with the results obtained here in your experimental work?" and the broad statement was made that they correspond pretty well, but that they cannot say definitely as yet. The number of cases, surprisingly, has not been very large, but they expect that next winter, if fortune favors them, there will be a number of larger epidemics so that they can study conditions more leisurely.

There are a great many other things that could and should be mentioned to do justice to this work, but I have already overstepped the limits of time and very likely patience.

Dr. S. R. Blatteis, in discussion, said:

"May I ask if anybody in the audience has had occasion to observe a case of modified endemic typhus fever?

"I am surprised that they have not because they are not uncommon. We have them now and then and I am sure that other institutions have them now and then, and the disease once seen is very typical and is not easily mistaken. It is so easily identified that the more experienced nurses will whisper in the house physician's ear that a case of typhus fever has been admitted to the ward, and they are usually right.

"It is of sufficient interest, even though it takes some time, to present the clinical picture. The patients give a history of a rather abrupt onset, somewhat different from the five days' prodrome time of the case reported tonight. The onset is abrupt with a temperature that is frequently high, about 104 or 104.5, and the patient looks flushed in appearance, with congested conjunctivae, with a rather anxious expression as if he were suffering from a severe headache, and he is actually suffering from a severe headache, so severe that there is some rigidity of the muscles of the neck and if one is not careful one suspects the possibility of the presence of some cerebro-spinal condition. There is distinct rigidity and then when you expose the chest you will find over the front of the chest, the shoulders and axillae a rather diffuse rash, not raised, more of a broad exanthematous rash rather than a distinct and discrete rash such as we have in typhoid fever, and then with this picture all that one needs is some laboratory corroboration, which is very easily obtained. If it is a case of typhoid (and it is often mistaken as an atypical type of that fever), it should present a blood count of a low type, *i. e.,* a leukopenia. Four, five or six thousand leukocytes with a temperature of 104 and less, give one a suspicion of typhoid, if nothing else, but when instead of leukopenia, a leukocytosis, true, rather moderate, from 12,000 to 14,000, but still distinctly not a leukopenia, and then in your differential count, you find instead of having a relative increase of the lymphocytic leukocytes, you have a polynucleosis, so that we have a leucocytosis varying from seventy-eight to even ninety per cent of polymorphonuclears and the rest divided between lymphocytes and mononuclears. We have studied the question of whether or not there is a mononuclear excess and we find that the mononuclears which ordinarily in typhoid or in the normal blood count are only present to the extent of from two-four per cent, go up to seven and as high as nine per cent, and we can immediately tell that we are not dealing with a case of typhoid fever. The Widal is always negative; the blood culture is always negative, so instead of calling these cases an abortive typhoid or an atypical form of typhoid (and they were so called by the best men before attention was called to this fact), we have means at our disposal of making a definite clinical and now also bacterial and laboratory diagnosis of the endemic form of typhus fever."

Remarks by Dr. M. Lederer:

As a corollary to Dr. Blatteis' presentation I have a case to report in which we succeeded in isolating the bacillus typhi exanthematici at the Jewish Hospital from one of the cases of mild typhus fever.

This was a man of twenty-six years who was admitted to the hospital on April 21st of this year. He had been ill for six days with typhus fever before he was admitted, but he gave a history of having had a sore throat for five days before that. Now whether the sore throat had anything to do with the onset of Brill's disease we do not know. As a rule, I think, these cases begin rather suddenly with a history such as this man gave six days before admission; that is, chills, fever, severe headache and insomnia. He took his own temperature during that time and said it ranged between 101 and 102 degrees by mouth. One day after admission (on the 22d) a blood count was taken and which showed 12,900 leukocytes, eighty-one per cent polymorphonuclears and five per cent mononuclears. A second blood count, taken on the 24th, was more typical of the disease and showed 14,000 leukocytes with seventy-three per cent polymorphonuclears and seven per cent mononuclears. The poly. count usually runs about ninety-one per cent with a mononucleosis of from seven-nine per cent and sometimes a little higher.

Physical examination of the man on admission showed the usual signs that we find in Brill's disease—these of toxic symptoms and the marked measly rash. Widals were done on the 22d and 26th of April. Both were negative. The Wassermann reaction was also negative. We have been studying the relation of the Wassermann to Brill's disease rather closely because of the statement of one investigator who claimed that while at work in Servia during the Balkan War he had obtained a positive Wassermann, together with other workers, in every case of typhus fever. We have not been able to confirm that and I understand that they have not been able to confirm it in Mount Sinai Hospital.

This man's temperature on admission was 104.6 and his pulse was 100. The temperature ran between 104.6 as a maximum and 102.4 as a minimum for five days and then suddenly fell within twenty-four hours to normal and remained so during his stay in the hospital, until the 4th of May.

A blood culture was taken on the first day after admission, the sixth or seventh day of the disease as we figured, the onset beginning six days before admission, and it was six days before the crisis. The culture was taken as they take it in Mount Sinai; that is, 20 c.c. of blood were withdrawn from the median basilic vein most carefullv so that no air could mix with the blood. We use an all-glass syringe for that purpose. The blood was then divided into two flasks and four test tubes of solid media. The solid media as advised by the workers at Mount Sinai consists of 20 c.c. of a two per cent dextrose agar mixed with about 4 c.c. of ascitic fluid. The latter must be tested out under anaerobic conditions for three weeks before being used. The glucose agar is put into test tubes. We use tubes six inches long by three-fourths inch wide. The agar is first boiled and then cooled down to about thirty-eight degrees centigrade in ice water. Blood is added, 2 c.c. to each tube. Then the serum is added. It is very carefully mixed so that no air bubbles are incorporated in the media. Then it is cooled down in ice water until it solidifies. A layer of about one inch of agar is added to exclude the air. An inch of paraffine is layered over this surface to prevent evaporation. Without the paraffine the media has a tendency to dry up. These cultures were allowed to remain in an incubator for about eighteen days and were observed daily. In the positive cultures a small, round, opaque body or colony appears about from one to three centimers from the bottom of the test tube. Under favorable conditions there develops a brownish precipitation about this colony. The test tube is cut or scratched by means of a file; it is broken and then, under bacteriologically sterile conditions, the colony is cut across. It then appears as a Y-shaped affair with the arms of the Y having a fusiform shape. Sub-cultures are made from these colonies. We obtained in one ot the tubes only two such colonies. The other three tubes contained some contaminating colonies, but none that were typical of the bacillus typhi exanthematici. These cultures were then transferred to glucose serum agar slants and grown under anaerobic conditions in our laboratory and another culture was sent to Mount Sinai together with a specimen of the original colony—part of the original colony. We obtained a growth in about a week, a typical growth, on the agar slants. The Mount Sinai workers reported that they could not obtain their growth. Whether it had been spoiled in transit or not, I do not know, but, morphologically, they said that the organism which we had submitted to them resembled the organism causing typhus fever. We then sent them another culture from our sub-culture and they succeeded in growing it and running it through and confirming our diagnosis of the bacillus typhi exanthematici.

The organism itself is a very small pleomorphic gram positive bacillus varying in length from nine-tenths to about two microns. It is sometimes straight. Sometimes it presents a curved appearance. Sometimes it resembles the pseudo-diphtheria. That was the first impression I think I got on looking at the slide.

Regarding its biological characteristics: I do not think there is any necessity of going into that here, but we thought it would be of interest to report this case inasmuch as it is really the first one that we have succeeded in getting. We have done other anaerobic blood cultures in four cases of suspected Brill's disease since, but have not been lucky enough to get another.

Sleeping Sickness—Trypanosomiasis; With Presentation of Patient.

Dr. George L. Buist.

Dr. Frederic C. Eastman, in opening the discussion, said:

"The case before us was seen by me early in October through the courtesy of Dr. Buist. In order to save time I will briefly summarize the most important data in the history and the positive points in the physical examination.

"The patient, a physician, forty-two years of age, was associated with a mining concern in East Africa at a town called Bene, about six years ago. About fifty-seven per cent of the native population at that time was infected with trypanosomiasis. The doctor received his infection, as Dr. Buist has said, while canoeing and was bitten on the head; about ten hours later he developed marked local swelling accompanied by a temperature of 102 degrees. Some ten or twelve days later he noticed swelling of the post-cervical glands, and sometime after that there began a progressive muscular weakness together with the characteristic drowsiness. Some few months after the onset of the trouble there was a temporary paralysis of the right leg. Later bladder and rectal symptoms developed and these three—muscular weakness, bladder and rectal symptoms—have progressed more or less up to the present time. Some six months after the onset of the infection trypanosomes were found in the cerebrospinal fluid at Stanleyville in Africa, and later in London and Paris and Brussels.

"Upon physical examination it was noticed that the patient's gait was shuffling in character with a marked tremor of the muscles of the legs and a slight degree of ataxia. There was marked muscular weakness of the whole body, but more especially of the left side. There was some drooping of the lids, although not a true ptosis. There was marked tremor of the tongue and lips and more or less slurring of the speech. The sensation was practically normal. The tendon reflexes were all markedly increased. The organic reflexes, sexual. bladder and rectal, were all impaired, and there was found to be very marked constipation and difficulty in urination, alternating at times with incontinence. To come to the mental symptoms, the patient is indifferent, dull and apathetic. He is quite markedly disorientated as to time. The examination took place, as I remember, on Monday the 4th day of last October. When asked to give the day he said it was Wednesday. When asked to give the date he said it was the 16th of November, 1916. The memory is badly impaired. He gave us a narrative of his history which varied greatly at different times. Sometimes, within a few moments, he would vary his statement as to some particular point. Upon being shown a knife, file and key and told to remember them, within five minutes he could only remember the knife. The same test was subsequently repeated with two keys, a file and a coin. Five minutes later he said he thought it was a knife he had seen, but remembered nothing further. He failed badly in very simple arithmetical sums in multiplication and subtraction. His judgment, I might say, is also badly impaired. He has a sense of well-being, well-feeling. He believes he is cured, that he is now well and that he is perfectly able to go back to practice his profession.

"In examining this case I was immediately struck with the analogy between this condition and general paresis. Of course, the pathology is very similar. We have a meningo-encephalitis with effusion of lymph and round cell infiltration, and there is a similarity in many of the symptoms—the marked muscular weakness, temporary paralyses, tremor of the lips and tongue, slurring speech, involvement of the bladder and rectum and memory defects, together with a certain amount of euphoria.

"This case is a very interesting one because of its extreme rarity in this country."

Dr. Daniel R. Robert, in closing the discussion, said:

"The case we have seen here tonight has been very thoroughly covered by Dr. Buist and Dr. Eastman.

"I have seen several of these cases in London in men in the same position as the patient here tonight, men who have been in the government service in West Africa, and also in Rhodesia. The Rhodesian form of the disease is much more fatal than the disease as we find it in West Africa. I don't think there ever has been recorded a case of recovery or apparent recovery from the Rhodesian form of the disease—they are progressive from the start. The Gambian form of the disease, on the other hand, has been arrested by treatment with atoxyl and tartar emetic and other preparations. Sir David Bruce mentions a case in which the trypanosome gambiense was found in a patient five years ago and although the man has had two or three recurrences, he is still enjoying fairly good health.

"One thing about the disease that we should not forget is the carriers. Now it is possible that the trypanosome may be carried by some fly other than the glossina morsitans and palpalis morsitans, and that brings up a point in which game act as a reservoir for these trypanosomes, whether if we import game, as we do in our zoölogical gardens here, they cannot exactly pick up some carrier in this climate and run the danger of infecting our own population. They are doing some work along that line now especially among the British Army Medical Service, and they hope to get some results in that regard.

"I think the case has been a very interesting one indeed and it is, of course, a very rare disease in this country. I think you have all had a great privilege in seeing it."

The Evolution of Cancer.

Dr. Wm. C. MacCarty.

Dr. Francis Carter Wood of Manhattan, in opening the discussion, said:

I am very glad to be able to speak here tonight to the members of the Brooklyn Pathological Society, as I have never before had the opportunity to do so, and am also glad to discuss this paper of Dr. MacCarty's.

I feel very much like that interesting earthworm that he told about, whose situation reminds me of a fragment of a letter I was reading today in the delightful Life of John Hay. Hay had been somewhat irritated over some diplomatic correspondence, and in this letter he said that there are three things—diplomats, crawfish, and women—about which one can not tell whether they are going or coming. I think that the earthworm should be added to that class, and I must confess that the pathologists could be put in also. As Dr. MacCarty read his very profound paper, I did not know whether I was going or coming. He let down the curtain and revealed a few of the difficulties which we have all experienced in the study of tumors. The more minutely they are studied, the more difficult the problem is, and yet I do not imagine that when a pathologist is looking at a very thick section, while the surgeon is calling to him over the telephone to ask whether the tumor is to be cut out or not, he can recall all these histological and embryological facts to which we have been listening. Yet the slides and the discussion illustrate some of the points which he must work over before he can answer the surgeon's question as to whether or not a tumor is malignant.

Dr. MacCarty has very carefully explained that the cancer cell has no personal peculiarities, that it does not differ much from any other cell. He did not explain, however, I am sorry to say. why a cell is able to climb over the fence, beyond the gland wall, and there live in the tissues without being killed by a phagocyte. If he could have answered that question I would be out of a job, because that is the cancer problem. The cancer problem is concerned not primarily with morphology but with adaptation; for a cell growing out of its place and not being interfered with by other cells is a cancer cell. The cancer cell, in some way which we do not understand, has the power of growing in the tissues without being interfered with. If you take a piece of skin and put it under your own skin, it does not grow there; it may form a little cyst, but in a short time the cells are destroyed because they induce an immunity to themselves and cause a reaction; the phagocytes and other destructive agents are called out and the cells are eaten up. The cancer cells, on the other hand, can spread throughout the tissue without inducing the slightest reaction against themselves, and can destroy the organism by that very power of growth until the entire system is finally choked up.

But we do see, as Dr. MacCarty has shown us by his lantern slides, which were very interesting, that, after all, the pathologist rummages around with his microscope and finds some cells out of place and calls them cancer and not otherwise. Dr. MacCarty very wisely refused to state whether the cells in the second group are malignant or not. The only way we can ever determine this is through the co-operation of some surgeon who will cut out one-half of a tumor only, in which on examination the second group of cells is found to be growing, and will then let the patient demonstrate later whether the tumor is malignant or not. However, we do not try that experiment.

The cancer problem is a very difficult one; and we who examine a great number of tumors finally run up against it. We do not know whether certain of these tumors are malignant or not, and until we can get some means whereby we can determine this point we will be unable to say whether a tumor is benign hyperplasia or has reached the malignant stage. The difference of opinion among men who have examined a very large number of breast tumors is not very great. I have seen many such tumors, and I know that there are certain groups, very small it is true, which we can not place definitely. But, fortunately for the patient and for the surgeon, we are able to say that some groups are positively not malignant, and that other groups are cancerous and must be removed.

It is well tonight to go back over some of the difficulties which we run up against, and to let the surgeon see that the pathologist has, after all, to work hard to earn his living, because it is not easy to make a diagnosis under the microscope. That is not always possible, and a certain kindness and sympathy should be extended to the pathologist who is not always able, in two and a half minutes, to make a diagnosis of a malignant growth under the microscope.

Dr. Joshua M. Van Cott, in discussion, said:

"Dr. MacCarty suggested the idea of an irritant, but said nothing about it. Now these cells get loose and, as Dr. Wood has said and Dr. MacCarty has shown, they get outside of the lining membrane and then they are cancerous. The thought occurred to me that while we do not know what that irritant is, isn't it fairly possible that these cells are becoming immunized to the irritant so that they gradually acquire the power which is brought about by the effect of the irritant? They strengthen themselves and then break loose to combat whatever this irritant may be. Whether it is a physical chemical irritant or whether it is some other living being we do not know. That point is still mooted and I think both of the gentlemen will agree has not yet been absolutely determined."

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

MARCH, 1916

STATED MEETING, MARCH 21, 1916.

The President, Dr. Ralph H. Pomeroy, in the chair. There were about 150 present. The meeting was called to order at 9 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Joseph S. Baldwin, 493 Classon Ave.; Cornell, 1913; proposed by R. P. Sullivan; seconded by J. M. Downey; Jan. '16.

John B. Byrne, Jr., 224a 6th Ave.; L. I. C. H., 1903; proposed by H. M. Mills; seconded by Membership Committee; Dec., '15.

Chas. F. Durning, 2101 Voorhies Ave.; P. & S., N. Y., 1898; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

Morton M. Jenssen, Pier 4, Bush Docks; Univ. Christiania, 1898; proposed by H. Bryn; seconded by S. J. McNamara; Jan., '16.

Pierre A. Renaud, 48 Prospect Pl.; L. I. C. H., 1913; proposed by R. Durham; seconded by H. K. Bell; Jan., '16.

Harry K. Reynolds, 67 Gates Ave.; Univ. & Bell., 1910; proposed by E. Bishop; seconded by D. S. MacNaughton; Feb., '16.

Maurice L. Wieselthier, 612 Bedford Ave.; P. & S., N. Y., 1909; proposed by M. Lederer; seconded by J. H. Isquith; Jan., '16.

Election of Members.

The following, duly proposed and accepted by the Council, were elected to active membership:

John M. Auwerda, 332 Jay St.; L. I. C. H., 1912; proposed by C. F. Pabst; seconded by Membership Committee; Dec., '15.

Henry M. Feinblatt, 374 Union St.; L. I. C. H., 1913; proposed by J. C. Cardwell; seconded by L. F. Warren; Jan., '16.

John H. Flynn, 493 Linwood St.; Tufts, 1915; proposed by J. R. Kevin; seconded by J. A. Lee; Dec., '15.

George W. Hart, 3111 Glenwood Road; P. & S., N. Y., 1901; proposed by E. G. Hynes; seconded by S. J. McNamara; Dec., '15.

David Last, 335 So. 5th St.; L. I. C. H., 1913; proposed by W. H. Best; seconded by Membership Committee; Dec., '15.

Wm. Lehrich, 139 Bay 17th St.; Univ. & Bell., 1908; proposed by E. H. Mayne; seconded by R. Byington; Apr., '15.

Charles F. McCarty, 418 E. 28th St.; Fordham, 1913; proposed by J. R. Kevin; seconded by J. A. Lee; Dec., '15.

Frank T. Mangold, 1301 Bushwick Ave.; L. I. C. H., 1912; proposed by W. H. Best; seconded by Membership Committee; Dec., '15.

Filippo Morvillo, 771 Union St.; Univ. Naples, 1899; proposed by H. M. Mills; seconded by Membership Committee; Dec., '15.

John J. O'Keefe, 2653 Church Ave.; L. I. C. H., 1908; proposed by E. B. Wilson; seconded by S. J. McNamara; Dec., '15.

Wm. C. Waggoner, 167 Taylor St.; Miami,

1903; proposed by S. M. Strong; seconded by A. M. Judd; Dec., '15.

Daniel E. Welch, 135 St. Marks Ave.; Tufts, 1910; proposed by J. R. Kevin; seconded by J. A. Lee; Dec., '15.

Applications for Membership.

Applications for membership were received from the following:

Wm. Thos. Allen, 676 Park Pl.; P. & S., N. Y., 1900; proposed by A. E. Shipley; seconded by T. B. Hegeman; Mar., '16.

Joseph Blinder, 8669 Bay 24 St.; Univ. & Bell., 1911; proposed by W. L. Wolfson; seconded by L. S. Schwartz; Mar., '16.

Lamont H. Fisher, 1112 Dean St.; Univ. & Bell., 1912; proposed by J. J. Wagner; seconded by H. T. Peck; Mar., '16.

George Freiman, 703 Grand Street; L. I. C. H,. 1914; proposed by W. C. Waggoner; seconded by Membership Committee; Mar., '16.

Philip Leibowitz, 1246 St. John's Pl.; L. I. C. H., 1913; proposed by C. W. Stickle; seconded by M. Lederer; Feb., '16.

Chas. V. O'Brien, 1560 73d St.; Syracuse, 1909; proposed by D. A. McAteer; seconded by J. J. Delany; Mar., '16.

William Henry Donnelly, 178 Woodruff Ave.; McGill Univ., 1903; proposed by S. J. McNamara; seconded by Membership Committee.

S. Lloyd Fisher, 2911 Clarendon Road; Jefferson Med. Coll., 1907; proposed by S. J. McNamara; seconded by Membership Committee.

William Dennis Scanlan, 196 Prospect Park, W.; L. I. C. H., 1907; proposed by S. J. McNamara; seconded by Membership Committee.

BY TRANSFER (from New York County.)

Jacob Heller, 928 Eastern Parkway; Cornell, 1899; proposed by A. M. Judd; seconded by Membership Committee; Mar., '16.

BY REINSTATEMENT.

Charles J. Pflug, 53 Stuyvesant Ave.; N. Y. Univ., 1895; proposed by J. M. VanCott; seconded by O. A. Gordon; Mar., '16.

Scientific Session.

Paper: "The Treatment of Renal Tuberculosis" (Illustrated by lantern slides in color). By Burton Harris, M.D.

Address: "Welfare Work in the Steel Industry of the United States." (Illustrated by numerous photographic views.) By Thomas Darlington, M.D., Honorary Member, Medical Society, County of Kings.

Impending Medical Legislation. By Samuel J. Kopetzky, M.D., Member of Committee on Legislation, State Medical Society.

MOVED by Dr. J. R. Kevin that the President appoint a committee from the elected delegates to consider and formulate action regarding the two prospective bills before the Legislature known as "The Industrial" and "The Regents" bills.

Dr. Campbell reported on behalf of the Pilcher Memorial Committee, that the second week in May had been chosen for Pilcher week instead of the week of March 27th., due to death in Dr. Pilcher's family, and that the banquet in Dr. Pilcher's honor would be held on May 12th.

Meeting adjourned 11:20 p. m.

CHARLES E. SCOFIELD,
Secretary.

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A BIOLOGICAL CONCEPT OF THE STRUCTURE OF THE PROTEIN MOLECULE.*

Victor C. Vaughan, M.D.

Ann Arbor, Michigan.

SOME fifteen years ago I decided to undertake the study of the chemistry of bacteria. Up to that time bacteria had been grown only in test tubes and in Roux flasks. It was necessary, if my work prove successful, to get bacterial cell substance in very large amount. I started out with Roux flasks and inoculated 500 with the colon bacillus and obtained what appeared to be a very abundant growth, but if any of you have ever attempted to fish out from Roux flasks bacterial growth you will recognize the fact that it is a tedious process; in fact, I found that the wear and tear on my soul was too much for any such procedure. Finally, I succeeded in making large tanks in which I have grown bacteria since that time. I have elsewhere described these tanks and I will not go into their description here. Some of them are in use in New York City, I think one at the Rockefeller Institute and one at Cornell. In this way I have been able to obtain bacteria in very large amount, literally getting pounds of pure cellular substance, thus obtaining enough to satisfy the chemist with any amount of material.

I can only touch tonight upon some of the most important points.

It is generally stated in our text-books that bacteria are low forms of vegetable life. Whether they are or not depends wholly upon our definition of what is necessary to constitute vegetable tissue in contradistinction to animal tissue. Some of the early observers of bacteria, notably Pollender in 1849, found that bacteria did not dissolve readily in either dilute acid or dilute alkali, and concluded from this that they are vegetable organisms. It is true that Hammerschlag and others reported many years ago the presence of a large amount of cellulose in bacteria. If this be true, then bacteria are undoubtedly vegetable organisms. However, their methods of investigation were not free from sources of error. In this country Dr. Schweintz of Washington, reported about 6 per cent of cellulose in tubercle bacilli. However, he does not seem to have been altogether satisfied with his own work because he states in his conclusion that cellulose might be present in traces in tubercle bacilli, but is not present in the bacillus of glanders with which he worked. An Italian observer, Vincenzi by name, some years later, by more exact and scientific methods, came to the conclusion that bacteria do not contain cellulose. With the very large amount of cellular substance that we have worked with we have been able to decide this question, I think, quite positively. Bacteria do not contain cellulose. If, therefore, cellulose be essential to plant life, bacteria are not forms of plant life. I would not say that bacteria are animals. I would simply say that they are bacteria and that they are particulate proteins without putting them in the class of either plants or animals.

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* An address before the Brooklyn Pathological Society, Jan. 13, 1916.

Another point of discussion has been the question as to whether bacteria contain nuclei or not. There have been arguments and experiments, pro and con, on this subject. We have worked this out, I think, quite satisfactorily and we have come to the conclusion that bacteria are practically all nuclei. One of the early definitions of a cell was a substance which contained a nucleus and possibly a nucleolus. Now, we know that many of the uni-cellular organisms do not contain any recognizable nucleus, and among these we have bacteria. However, the fact that bacteria take the basic anilin dyes so readily indicates that they are chromophilic and suggests at least that they contain a large amount of nuclear substance.

I think we will have to modify the old definition and say that a cell is an individual organism which contains a nucleus, not necessarily a morphological nucleus differentiated from the rest of the cell, but nuclear material which may be diffused throughout the cell. This is a matter of importance because the principal function of bacteria is to grow, to multiply. A nuclear tissue is necessary for multiplication and bacteria consisting practically altogether of nuclear material are in the best possible form for growth and for multiplication.

The rate at which bacteria grow has been studied. They differ in the rapidity of growth, but the period between fissions or between generations in the cholera baccillus, under suitable conditions, is about thirty minutes. That is, the cholera baccillus divides about once in thirty minutes. With the tubercle baccillus, multiplication is much slower, just how slow I don't think any one has ever determined.

Another thing about bacteria which is of interest is the question as to whether or not they are composed of essentially the same substance or of similar substance. What is the difference between a pathogenic and a non-pathogenic bacterium? Why is it that one organism is capable of producing disease in an animal while another, growing apparently in the same way, is not capable of doing so? For many years it was supposed that the difference between a pathogenic and a non-pathogenic bacterium lies in the fact that the former is able to produce a poison and the latter not able to produce a poison, the pathogenic organism producing a poison and the non-pathogenic germ not producing a poison.

When getting this cellular material in this way, we found that all bacteria, dead bacteria, injected into animals caused more or less disturbance in health, or more or less marked pathological lesions, and, strange to say, we found that the dose of cellular substance of bacteria necessary to kill animals does not correspond at all to their pathogenicity. Of all the bacteria with which we have worked, some of the non-pathogenic bacteria when obtained in this form, the dead cellular substance, furnish the most powerful poisons. For instance, the prodigiosus, the dead cellular substance of the prodigiosus, kills 100 per cent of guinea pigs when injected into the abdominal cavity, one part of the cellular substance to 90,000 parts of body weight, and it kills a certain per cent of guinea pigs, one part to 2,000,000 parts of body weight. This is a powerful poison, as you will see from these figures.

Having found that bacteria, both pathogenic and non-pathogenic, produce lesions and disturbances in health in animals, we compared them and, rather strange to say—in fact we were quite surprised when we first found that the non-pathogenic bacteria, for the most part, are more poisonous than the pathogenic. I have given you the figures about the prodigiosus. Compare that with the anthrax bacillus which is a typical infecting organism. While one part of the prodigiosus kills in 90,000 parts of body weight 100 per cent., of the anthrax bacillus it requires one part to 2,500. That is quite a difference, and when we came to the tubercle bacillus we found that no amount, no reasonable amount, no amount that we ever tried of the dead tubercle bacillus injected into the abdominal cavity of a guinea pig will kill it, and still the guinea pig is highly susceptible to tuberculosis.

After a while we found that we could isolate the poisonous substance from the bacterial cells. The method of doing this—at least the best method which we found—was to heat this bacterial cellular substance with dilute alkali in absolute alcohol, 2 per cent. of sodium hydroxide in absolute alcohol. By splitting up the bacteria in this way we obtained a soluble poisonous substance. Having found this soluble poisonous substance in both the pathogenic and non-pathogenic bacteria, quite naturally we were led to try to see if we could find any poison in other protein material, so we went to work with animal proteins. We tested the casein of milk, serum albumin and serum globulin. We tried muscle, nerve and all the tissues of the body and we found in all of these the same poisonous substance that we found in bacteria. After reaching this point I admit that I had some uneasy feelings. I wondered whether our vegetarian friends are right and we are wrong, and whether bacteria and animal proteins contain poisons while vegetable proteins do not, so we went to work with vegetable proteins, the gluten of flour, the zein of corn meal, the edestin of hempseed and various other vegetable proteins, and I must admit that it was somewhat of a relief to me when we found that all these contain just as much poison as the bacterial and animal proteins. So far as the work has gone, and very extensive work has been done, not only in my own laboratory, but elsewhere, no true protein has been examined which has not yielded a poisonous substance.

Whatever the origin of the protein may be, it contains a poisonous substance and this poisonous substance is grossly the same in its action. There are some fine differences in the effects and there are some differences in the chemistry, but so far as our experiments have gone, it makes no difference what protein you get the poison from, it has practically the same effect, and, indeed, we have found the most abundant yield of this poison so far in the casein of milk. Think of that, all mammalian young are reared, during a certain period of their life, on milk and still you can obtain from one gram of casein enough poison, when injected intravenously or intracardiacly, to kill 800 guinea pigs. You will understand that given by mouth these substances are not poisonous. They couldn't be because we are eating all kinds of proteins, more or less bacterial proteins and, of course, animal and vegetable proteins. Now why are they not poisonous when taken by mouth? For two or three very good reasons. In the first place, the digestive ferments of the alimentary canal break up these poisons into harmless substances. In the second place, even though they were not broken up, they are not diffusible and would not pass through the walls of the intestines; so as long as they are confined to the alimentary canal they are not poisonous.

Let us go back to the question as to whether a given bacterium is pathogenic or not. Having found that all bacteria contain this poison and all proteins in fact contain this poison, let us see what distinguishes between a pathogenic and a non-pathogenic germ. Germs are living organisms and every living thing must feed. We cannot conceive of a living thing which could continue to live for any length of time without feeding. Moreover, every living thing must feed upon that which is within its reach. Foods are prepared by means of ferments. I will admit that we don't know what a ferment is, but it covers our ignorance, and our ignorance is dense enough to need some covering, so we will say that ferments act. There are things, whether we call them ferments, enzymes or what we please, which are necessary to split up the gross pabulum within the reach of the cell. Another thing which we learned in our study of bacteria is that while they may be simple morphologically they are not simple chemically. We are in the habit of saying that bacteria are low forms of life and in a certain sense that is true. They are unicellular forms of life while the higher forms of life are multicellular, but the chemical structure of the bacterial cell is just as complicated as that of the most highly developed cells in our own bodies. Bacteria may be, morphologically, low forms of life, but, chemically, they are not. They may be primitive forms of life so far as form and structure are concerned, but, chemically, bacteria are highly-developed forms of life. This is a matter of importance because in the contest which goes on between the body cells and the bacterial cells it is not a fight of a giant against a pigmy. It is not a fight of one party prepared with all the armaments of destruction while the other is untrained and has no means of defense or offense. Bacterial cells are as highly organized and as complex, chemically and physiologically, as the cells of our own bodies. Before a given bacterium can be pathogenic to an animal it must be able to grow in that animal's body—to multiply. In order to do so, it must be able to feed upon that animal's body. It feeds by means of its ferments. Therefore, before a given organism can be pathogenic to a given animal its ferments must be able to split up and eat and properly incorporate in its own tissues the tissues of the animal body. That's one thing that determines whether a given organism, a given bacterium, is pathogenic or not. That, however is not the most important thing. The most important thing is this: the cells of the animal body, like the bacterial cells, are supplied with ferments. They eat. They feed. They break up the pabulum within their reach and if the body cells are able to destroy immediately the first germs that get into it so that they can not grow and multiply, then the body is immune to that bacterium.

I am going to make a statement that will not at first seem so plain to you. The dead cellular substance of a bacterium to which an animal is naturally immune kills that animal on first injection. The dead cellular substance of a bacterium to which an animal is naturally immune in its living state kills that animal on first injection. Why? For the very reason that it is immune to it. A few bacilli of the bacillus prodigiosus get into your body, you inject a few under the skin when you prick your finger with a needle carrying these. What happens? Why, the body cells digest those few and digest them immediately. Consequently they can not grow; they can not multiply; they can not infect the body. If you grow these germs in vitro and then inject enough of them into the animal body, the animal body splits them up; it cleaves them and in doing so sets free their intracellular poison and the animal dies. On the other hand, the dead cellular substance of a bacterium to which an animal is highly susceptible does not kill that animal on first injection. The tubercle bacillus thrown into the guinea pig's abdominal cavity will not kill the guinea pig, and why? Because the guinea pig cells can- bacillus, possibly one, gets into the guinea pig's body it can eat the not feed upon the bacillus tuberculosus. Therefore, when the tubercle guinea pig proteins, it can thrive on the guinea pig, the secretions of the cells of the guinea pig can't destroy the tubercle bacillus, so it grows without let or hindrance and this is the reason why the guinea pig is so susceptible to tuberculosis and for the same reason human beings are susceptible though, of course much less so than guinea pigs. Have I made that plain? Please understand that the dead tubercle baccillus when thrown into the abdomen of the guinea pig does not kill it. It has no recognizable effect upon that animal. If you inject the colon bacillus into the abdominal cavity of a guinea pig it kills it because, to a certain extent, the guinea pig is immune to that organism, but if you inject the tubercle bacillus it does not kill it because the guinea pig is susceptible to the tubercle bacillus. Does it do the guinea pig any harm? If you inject the dead tubercle bacilli into the abdominal cavity of a guinea pig, or a series of guinea pigs, and kill one from time to time and see what has become of the dead tubercle bicilli, you will find that the great omentum has gathered up these foreign bodies just as it would powdered charcoal if you would put that into the abdominal cavity, but does it do the animal any harm? This is an important thing. It isn't necessary to kill an animal in order to do it some harm. If you will make microscopical sections of these nodules that are formed in the omentum from time to time you will find tubercular lesions are induced. Of course, there being relatively few bacilli and they being altogether in the omentum, it doesn't shorten the animal's life; it doesn't interfere with its activities. We conclude from this that the lesions of disease are not due directly to the growth and multiplication of bacteria in the body. That is a different way of looking at infection from what we have been accustomed to. I formerly believed and I taught my students that the ulcerations of typhoid fever, for instance, are caused by the typhoid bacilli living in the intestinal canal, eating, gnawing away the walls of the intestines. That is what I thought was the case. That was what everybody believed, but dead typhoid bacilli will produce typhoid ulcerations in the intestines quite as well and quite as markedly as living typhoid bacilli, so it isn't, therefore, the growth and multiplication of the bacteria in the body which directly cause the lesions of the disease.

To make this plainer still, suppose that one af us, susceptible, should drink today water containing typhoid, or suppose we should be bolder still and do as some men have done, drink a culture of typhoid. We wouldn't have typhoid fever today. We wouldn't have typhoid fever tomorrow. Nor the next day. The period of incubation in typhoid fever after the bacillus gets into the alimentary canal is somewhere between six and ten days. When my comrades and I, investigating typhoid fever in the American Army in 1898, came to the question of incubation of typhoid fever we made as close a study as we could. We picked out 40 nurses—40 nurses sent from Chicago to Chickamauga. We assumed that those nurses reached Chickamauga uninfected with typhoid fever. We put those nurses to taking care of typhoid patients in the Leiter and Sternberg Hospital and we kept close tab upon them to see when they came down with typhoid fever. The earliest case of typhoid fever in those nurses was 10 days. Then we picked out recruits coming to Chickamauga and other camps. One regiment from Pennsylvania went into the campaign 800 strong. They were recruited to 1,200. We assumed that the 400 coming into the camp reached there free from typhoid infection. In a general way this assumption was correct. There may have been individual exceptions. Then we watched to see how quickly these men began to come down with typhoid fever and we found 8-10 days was the shortest time, so we said that the period of incubation in typhoid fever is something less than 10 days. That was the best we could do. When you read stories about the period of incubation in typhoid fever being 3 months or 3 weeks or something of that kind, some of the English journals, for instance, telling you that blankets sent from South Africa to London and sold and used caused typhoid fever among those who used the blankets, that is all true, but that shows nothing about the period of incubation of typhoid fever. It doesn't bear on it at all because the question is, When did those germs get from the blankets into the alimentary canal of the individual? There's where we must begin to count from.

Since our work on typhoid fever where we put the period of incubation at something less than 10 days there have been in various laboratories in the world about 30 cases of laboratory infection with typhoid fever where we have known just the hour when the typhoid bacilli have been swallowed besides two or three other interesting people who have tried to kill themselves by drinking cultures of typhoid bacilli. In these cases we have all the data. When did they swallow the culture? When did the first symptoms of typhoid fever appear? Then an enterprising doctor, to make it all the more certain, decided that he could vaccinate by feeding typhoid bacilli by the mouth and he gave men some typhoid bacilli. All came down with typhoid fever and that has been a very valuable addition to our knowledge concerning the period of incubation of typhoid fever.

The point I am trying to make is this: That in every infectious disease there is a period of incubation. During that period of incubation the bacteria are multiplying with enormous rapidity and still there are no evidences of disease. In fact, Army surgeons will often tell you that men during the period of incubation with typhoid fever feel unusually well. During the very period when the bacteria are multiplying most abundantly in the body there are no symptoms of disease. It is, therefore, I repeat, undoubtedly true that the growth and multiplication of bacteria in the body do not directly cause either the symptoms or the lesions of disease. When the period of incubation stops and the period of active disease begins then there is quite a different change; quite a different process is inaugurated. The body cells now have learned how to destroy the invading organism and when that occurs, the period of active disease begins. The symptoms and lesions of an infectious disease are due to the destruction of the bacteria by the cells of the body. This isn't a discovery of mine at all. In the Annals of the Institute Pasteur 28 years ago there is on article by Gamaleia in which he demonstrated most conclusively that dead as well as living bacteria cause the symptoms and lesions of disease and that it isn't directly the growth and multiplication of the bacteria in the body, but their destruction which causes the symptoms and lesions of disease.

In the acute infectious diseases, if you have followed me so far, you will readily see that nothing more dangerous to the sick man could happen than the complete and sudden destruction of all the bacteria in his body. That would be pretty sure to kill him right on the spot because there would be enough of the poison set free in the destruction of bacteria to kill the individual.

Parenthetically, I want to call your attention to a point bearing upon this. Some people have said and occasionally I meet with some one who still says that all this fight against the infectious diseases is wrong; that the infectious diseases kill the people who ought to die and that in the long run the race would be better if we gave the infectious diseases free rein. I know that sounds to you perfectly absurd, but no less a man than the great philosopher of modern science, Herbert Spencer taught that doctrine—the infectious diseases kill the people who for the good of the race ought to die; that they weeded out the unfit. None of us have ever thought of it in that light, but we have thought of it in another way. I daresay that most of us believe, unless we have given special attention to it, that weak people, people in less than ordinary condition of health, that they are more liable to infection and that being infected, the death rate is higher among such people. When we began to study typhoid fever in the American Army in 1898 we had that idea. We expected to find that the less robust men would be the ones to furnish the larger number of cases of typhoid fever and that the case mortality would be greater. For that reason we decided, although it meant a great deal of work, to trace back the medical history of every man who had typhoid fever as far as we could. With many of the regular soldiers this was possible. We carried all back to the time of enlistment and in the regular Army this meant a good many years on an average. We expected to find that the weaklings, so far as there are weaklings in the Army, had typhoid fever and that they died from it. So we collected a vast amount of information trying to prove this thing. Before we got half way through, it was quite evident that it proved just the opposite thing. Out of 16,000 men who were under health—who had been frequently on sick report, about 7 per cent of them had typhoid fever. Out of 42,000 men who were never on sick report and had practically never been ill in their lives, some 18 per cent had typhoid fever, and that wasn't the most striking thing. Over 90 per cent of men who died of typhoid fever were men who had never been seriously ill in their lives.

Let us take time just for a moment and look at this. Some years ago I read a long article by some one, whose name I forget, trying to show that weaklings had typhoid fever, and he argued in this way: More men than women have typhoid fever; more adults than children have typhoid fever and the only conclusion you could draw from it or that he did draw from it was that sex had some mysterious influence, and age had some mysterious influence upon susceptibility to typhoid fever. More men have typhoid fever than women, why? Because the range of activity of a man's life on an average is far wider than that of the woman. He is exposed to typhoid fever many times while the woman is not exposed. More adults have typhoid fever than children for the same reason. More young adults have typhoid fever than elderly adults for the same reason. But why is it that the case mortality is more among the robust than it is among the weak? Because for the very good reason that the robust man puts up a big fight against the infectious disease and he either overcomes it speedily or, what is more likely to happen, nature overdoes the thing, kills off the bacteria too rapidly and death results.

I thought some years ago that I had made a discovery on this point. I think all of our Commission came to the conclusion that we had made a discovery that typhoid fever kills off the robust and the vigorous rather than the weak. It would have been very well if we had been content with thinking that, but we were foolish enough to go back and read the history of typhus fever, one, two hundred years ago! indeed we went back and read the history of the plague by Thucydides five hundred years beforê the Christian Era, in which "the fairest, the strongest and most robust" furnished the greatest number of victims. One old Irish writer, about three hundred years ago, describing an epidemic of typhus fever, says "it went through the country picking out the strongest, the most robust, just as you or I would go through a flock of sheep picking out the best." Another Irish writer points to the fact that among the poorly-nourished, the institutionally-fed the mortality from typhus fever in Ireland was one out of 23 Out of the doctors, the nurses, the clergymen and the charity people (that is, the people giving charity) who went among these poor people the death rate was one out of 3.

The infectious diseases like war, kill off the strongest, the most vigorous, the most robust and, like war, they lead to the deterioration of nations. I don't think we can have any compunctions of conscience about doing all that we can to stamp out the infectious diseases.

I don't know that I have made plain what I have said about the nature of infection, so I will put it in another shape. During the period of incubation of an infectious disease the invading organism furnishes the ferment. The soluble constituents of the animal's body supply the food. These soluble constituents of the animal body are built into the bacterial cellular substances. The processes are synthetical and constructive. No poison is set free. There are no symptoms and the individual does not recognize the fact that he is a host caring for and feeding unlimited, undesirable, unwelcomed and unrecognized guests. That is the period of incubation. In the active period of the disease the body cells furnish the ferments. The bacterial cells constitute the food. The processes are destructive and analytical, complex cellular substances are broken down into simpler bodies, poisons are set free, the symptoms and lesions of disease are induced and life is put in jeopardy.

All who are practitioners of medicine will understand, whether I say it or not, that in actual cases there isn't this sharp line of demarcation between infection and the active stage of the disease.

In some part of the body incubation has ceased; bacteria are being broken down. In other parts of the body incubation is continuing, and the breaking down of the bacterial cell has not begun.

I haven't touched upon the subject of my talk yet and I have taken up a great deal of time, but in order to comply with my subject I must go a little farther and you must bear with me. My studies upon bacterial cellular substance, which I have very briefly and imperfectly related to you, have led me to some other beliefs which I wish to discuss as briefly but as plainly as I can. Life is not cellular. Life is molecular. It is not necessary that every living thing should take a definite form and should have what we call cell structure in order to be alive. Virchow, who really was the father of our cellular ideas, saw this and if you will read him (it is rather old to read now, but all of our pathology is based upon his teachings) you will notice how the dear old man dodged the question very nicely. He recognized the fact that not all the tissues of the body are made up of cells and he didn't know just what to do with the inter-cellular substance, and he gets around it by calling it near-cell substance.

Life is function, not form. Life is chemical and not morphological. Bacteria are made up of giant molecules, great big molecules, complex molecules, containing not only protein, but also nuclein and carbohydrates. Everything essential to the life of the bacterial cell is in one molecule. There may be many molecules in a cell, but it is a big molecule. Everybody who has studied unicellular organisms, has come to this conclusion. It was first suggested, I think, by Pflüger some thirty or forty years ago. It was sustained by Ehrlich on theoretical ground. It was held upon experimental and investigational grounds by Sonnofsky, a distinguished Russian investigator. I wish I had time to go into that, but there are just two or three applications of it that I want to make because I know I am talking too long.

The question of mutation in bacteria bears directly upon this point. Early investigators along bacteriological lines differed in their ideas concerning the possibility of mutation in bacteria. Pasteur, who was a chemist before he was a bacteriologist, didn't pay much attention to form. He regarded life as chemical rather than morphological. If Pasteur had stopped to have written a description of all the bacteria that he saw there wouldn't have been much left for others to discover, but he was too busy with studying the function of bacteria, their physiological and toxic action, to say much about their form.

Then came the dictum of Cohen which taught us that a given bacterium was just as immutable as the most highly-developed animal, that there are species and genera of bacteria and that there is no mutation among them.

Then came the teachings of Koch. We have all followed these teachings and they laid down as general principles cultural characteristics. If a bacterium was recognized by its taking a certain stain, why it was a species. If another bacterium took a different stain, it was another species.

The recent work of Rosenow along with a whole host of other workers—Rosenow is not the only man who has worked at this subject—a whole host of workers, and they all practically agree that bacteria conform within certain limits to the conditions under which they live. We used to believe that pneumonia was produced only by the pneumococcus. We now know that we can have other forms of pneumonia and that streptococci and staphylococci, especially the former, may cause pneumonia just as well as the pneumococcus; and then we were taught some years ago that the typhoid bacillus was immutable, that it never varies, that it could always be recognized by certain cultural characteristics and we now know that there are at least four varieties of the typhoid bacilli, one of the so-called typhoid bacillus, another paratyphoid A, paratyphoid B and paratyphoid C, and we know that, clinically, no man can distinguish the difference between these different forms of typhoid fever.

Why do bacteria so easily undergo mutation? Why is it that Rosenow has been able to change a pneumococcus into a streptococcus and a streptococcus into a pneumococcus and a streptococcus albus into a streptococcus viridans and so on? For the very simple reason as I have indicated, that bacteria are largely nuclein, that they are composed of giant molecules and that these giant molecules constitute really the living organisms and anything that strikes out one atomic group or tethers the atomic group in the nuclein leads to a change in its development. We get, therefore, varieties, species, and finally genera by chemical changes in the large molecules of the reproductive cells, and in bacteria the whole cell is a reproductive cell. It is what I am rather fond of calling, made up of naked nuclei or nuclei without any marked protection.

I haven't time to make anything more than a few suggestions for you to think about and work out. Fortunately, in the higher animals, notably in man, the reproductive cells are protected from the external world, but anything which changes the chemical composition of the reproductive cell is inherited. That is the reason why we have the inherited effects of chemical poisons, such as syphilis, such as lead, such as arsenic, such as antimony, etc., and I believe that the time will come when we will be able to demonstrate that (I admit that this is at present only a dream) the unit characters in our inheritance are atomic groups within large molecules and when these are modified the changes lead to the inheritance of unit characters. This I can only leave with you as a suggestion. I have talked now for nearly an hour and a half and I am sure I have wearied you. I feel as though I have presented this subject in a very imperfect manner. I have tried to cover a great deal of ground and I am afraid that I haven't made any of it very clear, so if your President will give opportunity I shall be glad to answer questions that may be asked.

TREATMENT OF HAY FEVER WITH POLLEN TOXIN.

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THE treatment of hay fever or pollinosis has been successfully established in the past two years. Some confusion still exists regarding the preparation of the toxin; how long before the onset of the hay fever symptoms treatment shall be initiated; and the relation of skin reactions to the degree of immunity attained. But more or less successful results are being attained regardless of how the toxin is prepared, or whether the injections are begun before or after the onset of the symptoms. The attainment of absolute immunity for succeeding years is a question that only time and a wide experience can positively establish.

The study of anaphylaxis, particularly of the respiratory tract, such as hay fever, vasomotor rhinitis and asthma, has developed some very positive facts that must be fully comprehended to diagnose and treat pollinosis successfully. Anaphylaxis of the respiratory tract is a group of symptoms which indicates the absorption of a native or unmodified protein. In hay fever the absorption usually occurs through the mucous membrane of the nose, and the protein is usually of vegetable origin in the form of pollen., In vasomotor rhinitis the absorption is nasal, but the protein may be from either vegetable or animal source. In asthma the absorption is usually through the mucosa of the alimentary tract, and may be animal, vegetable or bacterial in origin. In certain cases of hay fever or pollinosis, if the sensitization is sufficient or if the amount of pollen protein absorbed is sufficient, asthma will develop coincident to the nasal or hay fever symptoms. In fact vasomotor rhinitis, hay fever and asthma are simply measures of the degree of anaphylactic reaction. If nasal stuffiness occurs as in mild attacks of pollinosis, we call it vasomotor rhinitis. If the reaction is more severe, then ensues nasal occlusion, rhinorrhoea, sneezing, burning and itching of nasal mucosa and the conjunctiva, and we call it hay fever. If the reaction is still more pronounced, a vasomotor bronchitis, otherwise known as asthma, results. All the nasal symptoms of hay fever are but various degrees of vasomotor paralysis of the naves; all the bronchial symptoms of asthma are but various degrees of vasomotor paralysis of the bronchi and measure the extent of sensitization or protein absorption.

Another recently established fact is that chemically similar proteins will produce anaphylactic inter-reactions regardless of what the biological relations of their sources are. If a subject is sensitized to any one of the three varieties of ragweed, the pollen from either of the other two varieties will cause anaphylactic reaction or hay fever, because they are not only biologically closely related, but because the proteins in their pollens are chemically identical. If the proteins are not chemically identical, the pollens will not inter-react, regardless of the closeness of the biological relation. The establishment of this fact makes it possible to determine by skin reactions by what great group or family of plants a victim of hay fever is sentized. Then by testing with pollen of the various members of that group the guilty member can usually be determined.

This is an important phase in the treatment of pollinosis. When pollen is rubbed into a skin incision, in a sensitized individual, a local vasomotor reaction results, provided the individual is sensitized to the pollen of that flower. In other words a larger or smaller wheal results. The interstitial changes in the skin are identical with the intranasal changes in pollinosis and the intrabronchial changes in asthma, and serve as a means to identify the offending pollen.

There are four seasons of the year when people usually develop pollinosis. The earliest is during the flowering period of the dandelion, apple, willow, oak and maple. The symptoms during this season are usually very mild and are frequently diagnosed as a slight but persistent cold. The flowering of the grasses usually starts the second season. Beach grass and timothy are the chief offenders. The anaphylactic reaction is frequently quite severe, and is popularly known as Rose cold. This occurs in June and early July. Another but erratic season occurs in the latter part of July when the daisy covers the fields. The great season begins with the maturity of the ragweed blossom around the middle of August—most people designate the 18th as the initial day—and lasts till the blasting hand of frost puts an end to this pest weed that so generously fills the air with its pollen.

During the season of 1915, forty-seven cases of hay fever came under my care. Forty-two of the forty-seven cases were more or less benefited or relieved by the injection of a pollen toxin. Three received absolutely no relief from the treatment, and two discontinued it for various reasons before results could be expected. Of the forty-two favorable cases twenty-three were practically rendered immune except for two or three outbreaks that lasted for 24 to 48 hours. These cases were entirely free from any uncomfortable symptoms after immunity was established except for these few short outbreaks. The remaining nineteen cases were relieved to such an extent that none were obliged to leave their occupations or to leave the city. Most of them were entirely free from symptoms most of the time. The rest of the time their symptoms were annoying but not distressing, and their hay fever season was made not only very mild but much shorter. Treatment was begun before the onset of symptoms in sixteen cases. Of these ten were entirely immune throughout the season, developing no symptoms. Twenty-six cases came under treatment after the beginning of their hay fever. Eleven of these were practically free from symptoms after immunity was established; while fifteen were subject to several short attacks with intervals of absolute freedom or to a persistent mild nasal stuffiness with no rhinorrhoea, sneezing or conjunctival itching or burning. By skin tests this winter I have found that most of these cases were sensitized to two or more pollens, and the persistent mild nasal symptoms were due to a slight sensitization to pollen of which I had no toxin.

The local reaction at the point of injection was usually very mild or none at all. In no case was treatment discontinued because of this discomfort. Rather severe anaphylactic symptoms developed in two cases; one where rapid immunization was attempted, and one where the toxin failed to relieve and the dosage was too rapidly increased. From eight to twenty injections of toxin were necessary to produce or maintain immunity. The injections were at intervals of one to ten days. Where symptoms were very distressing, the injections were given twice a day.

The following interesting observations were made. A prominent surgeon who had been absolutely incapacitated by his nasal symptoms and asthma during the hay fever season for over twenty years came under treatment six days before the usual onset of symptoms. As a result of the toxin treatment he was absolutely free from hay fever throughout the season. A dentist was obliged to give up his chair, and a butcher serving his customers because of a very copious nasal drip. Both resumed work 24 hours after the initial injection. One young man sought treatment after ten sleepless days and nights, due to nasal distress and asthma during the intensest heat of last summer. He threatened to use a gun on himself unless relieved. Within three days he was able to sleep without difficulty, and remained immune the rest of the season. In several instances where active symptoms developed during a dry and windy spell, the symptoms cleared up within two hours after an injection. At one time several cases who had been entirely immune reported active symptoms. I was at a loss to understand why they should all go wrong at once. Upon testing the toxin, I found it had deteriorated and was useless. From that I learned that pollen toxin deteriorates so rapidly that it is absolutely useless within 48 hours after the change begins. Hence the necessity for fresh toxin every eight to twelve days.

In the treatment of hay fever, winter should be the time of preparedness. During the recent months I have made skin tests to determine the offending pollen in the new cases and the degree of sensitization still existing in the cases treated last summer. In practically all cases the skin reactions in the new or untreated cases have been more severe than in the cases I treated last summer, indicating the attainment of a certain degree of permanent immunization. The increase of the permanent immunization as well as the relief of the distressing active symptoms is the sought for goal in this treatment.

BLOOD TRANSFUSION.

Indications and Technic of Past and Latest Methods, with lantern slide illustrations.

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THE paramount interest in the technique of blood transfusion in the past few years has stimulated me, in addition to a good many others, to focus my attention on this important subject.

It is the purpose of the writer in this communication to bring to your attention the various methods of blood transfusion and briefly allude to some contrasts between the complicated, inaccurate and unscientific apparatus of the past and that of the ideal simple devices of today.

From a study of the literature, from observations of the practice by different men, I have obtained certain impressions of many of the numerous methods of blood transfusion now in vogue.

In addition to the authorities with their respective methods, which will give a panoramic impression of the subject, I wish to refer to some of my own ideas and work on the subject in hospitals and in private practice, both on the outside and in the office.

Periodically since the knowledge of the circulation and the value of blood has been established, different clinicians have advised blood transfusion in the hopes of saving life or to hasten recovery.

As early as the days of Columbus, when there was no concept of anything like circulation of the blood, we find in the book of Savonarola's "Life and Times," published in 1859-1861, Vol. I, page 151, the nature of the means employed to attempt the prolongation of the life of Pope Innocent VIII, who died in the month of July, 1492. Every means of restoring his exhausted vitality had been tried in vain, when a doctor proposed to attempt a cure by means of a new instrument for the transfusion of blood. Two or three healthy young men who volunteered their blood to save the Pontiff, were obtained, the patient was bled and the blood which escaped was injected into the veins of the young donors. When the blood had circulated for a short time, the young men were bled and the blood was transfused to the veins of the Pontiff. The donors died after the phlebotomy without saving the life of the patient.

Though transfusion was an ancient tradition, a German surgeon, Jean Daniel Meyer, claimed in 1667 to have been the first man to perform the operation.

In 1615, Libavius advocated arterial transfusion by means of a silver tube passing from a blood vessel of the donor to one of the recipient.

In 1665, Lower, of Oxford, bled animals to a condition of syncope and then resuscitated them by the injection of blood from other animals.

The first authoritative description of a transfusion was given by Denis, Professor of Philosophy and Mathematics in Paris in 1667. He injected ten ounces of lamb's blood and cured his patient. His fortunate experience was imitated with disastrous results until transfusion of blood was finally prohibited by law in France.

The early failures were due to disregard of the physiology of blood per se and to the use of cumbersome, complex mechanical appliances.

In 1825, James Blondell, of London, bled dogs until the pulse and respiration ceased and proved conclusively that animals apparently dead could be resuscitated by transfusion at the end of three or four minutes, but that if the operation were delayed for more than five minutes, it proved of no value. Russel, of Suffolk, is said to have cured a case of hydrophobia by opening the veins of the patient, allowing the blood to flow, and then transfusing the blood of several lambs.

The use of blood from the lower animals was soon after found dangerous and abandoned for human transfusion.

The methods practised in the first half of last century had a good many fatal results, so that three of the foremost surgeons of the time, Von Bergman, Senn and DaCosta, openly objected to blood transfusion and advocated normal salt solution intravenously in its place, except in cases overcome by illuminating gas. Their expressed opinion acted as a temporary stay to the performance of the operation, but soon after it became apparent that normal salt solution could not replace blood in every instance where living blood was essential. Normal salt solution does not contain the element necessary to the nutrition of the brain cells damaged by shock, nor does it contain red blood cells for a patient who must be brought out of gas poison, nor fibrin ferments, nor fibrinogen essential for hemophilia, nor the protective substances that resist infection.

Blood transfusion, therefore, is essential as a surgical therapeutic measure where more red blood corpuscles are needed, to supply new nourishment and oxygen carriers, to stimulate the blood-forming organs, to increase the coagubility of the recipient's blood or when a transfusion will tide a patient over an emergency in order that some other therapeusis may be of value.

In his latest book, Crile, on "Emotions," says: "If all the brains of an animal be removed by decapitation its body may live on for at least eleven hours if its circulation be maintained by transfusion, while an overtransfused animal may live many hours, days even, after the destruction of the medulla."

By what method is transfusion easily accomplished?

There are six kinds of transfusions, with three successful methods:

1. The direct method by means of (*a*) Suturing of vessels. (*b*) By the use of the cannula interpolated in the blood stream. (*c*) By the use of the cannula, bringing intima to intima.

2. The indirect or interrupted method (*a*) Needle and syringe. (*b*) Receptacle, containing anticoagulants.

3. The combination of the direct and indirect method—valve and syringe.

4. Auto transfusion—the driving of blood from the periphery to the centre of heart and brain as in bandaging limbs in post-partum hemorrhage in order to maintain circulation.

5. Reciprocal transfusion, which is the exchange of an equal volume of blood between a patient suffering from a febrile disease and one who is convalescing from such a disease, the blood of the convalescent being supposed to contain an antitoxin.

6. The peritoneal and subcutaneous injection of blood.

In the direct method of transfusion, the vessel of one person is united to that of another, by suture or tube. Suturing of the vessels brings intima to intima, and this method has been described and practised with great skill by Murphy, Carrel and Guthrie. The advantage of this method lies in the fact that it is possible to unite vessels of different size. Before attempting vessel suturing, however, it is very essential that the operator acquire the laboratory experience necessary to familiarize himself with the technical difficulties that may arise before one may feel certain of carrying out a successful transfusion. The method of interpolating a cannula into the bloodstream is the procedure of Brewer and Leggett who used glass paraffinized tubes.

The advantage of this method is the simple technique and the fact that it may be used in very small vessels. The objection to its use is the production of emboli as a result of trauma from the tubes and as a result of back currents due to the uneven calibers of the vessels.

J. F. Corbett modified this by using a gold tube with or without rubber connections. This has the advantage of the glass tube in that it is less liable to injure the intima and is more easily retained. It accommodates itself to a wide range in the size of vessels.

The two-pieced tube of Bernheim has an advantage over the single tubes, for the reason that it can be managed by two operators. While one-half is inserted in the donor, the other half can be introduced into the vessel of the recipient. The donor and recipient may be prepared in different rooms and after the stretcher of the donor is wheeled into the recipient's room and they are placed in apposition, the two halves of the cannula are invaginated.

The cannula method which brings intima to intima was originated by Tansini, improved upon by Queirolo, and again revised by Payr, and finally brought to our attention by Lepinasse and Eisenstadt. It is represented by the Crile method.

This has been modified by Janeway, Ellsberg, Buerger, Sarosi and a number of others. In this cannula the blood vessel must be cuffed over the cannula. The operation is of a major character and difficult to perform.

The direct method generally necessitates dissection of the vessels for several inches, it is not as easily performed as the description of each method makes the impression on the student, it destroys the vessels used of both donor and recipient, it requires expert surgeons to perform the operation and it does not offer scientific accuracy as to the quantity of blood transfused.

Before a practical method of measuring the amount of blood flow was devised the surgeon was compelled to rely upon clinical signs for an index of the amount of blood transfused.

The blood pressure, pulse rate, appearance of the patient, the time that the blood has or is supposed to have flown, and the increase of hemoglobin—these were his guides.

Having at our disposal several simple, safe and accurate methods of measuring the amount of blood flow transfused, it is but natural that no one would continue to travel in the dark when brilliant search lights are within reach.

The method up to date that deserves consideration is the rejuvenated indirect syringe cannula of Lindeman.

Over twenty years ago Von Ziemson reported numerous cases in which transfusion was successfully employed by such a method. It consisted of having one operator thrust a needle through the skin into the veins of the recipient, while another operator performed the same action on the donor. Three glass syringes of 25 c.c. capacity were kept constantly in action, one being filled with blood from the donor, the other being emptied into the veins of the recipient, while the third was being washed out with sterile salt solution by a third person before being again applied to the needle in the donor's vein.

By this procedure Von Ziemson was able to transfer any desired amount of unaltered blood and to measure it accurately.

Moritz (*Munchen., Med. Woch.*, 1911, 58, 393) emphasized the advantage of the method and introduced some improvements in technic which facilitated the puncture of the vein.

Lindeman, two years ago, using the same principle, devised a set of cannulae, by the aid of which even small veins may easily be entered and the danger of wounding the intima is reduced.

To Lindeman, therefore, belongs the credit for having Americanized the syringe method.

Those who have seen him do a transfusion must admit that all other methods hitherto in vogue were placed in perpetual shadow. The ease with which he handles the syringe and cannula is impressive to all who know the difficulties and failures of all previous existing methods.

Although his syringe method appears simple, some of our able surgeons and physicians of manual dexterity claim:

1. That it is not easily performed; that the cannula is frequently displaced from the vessels of both donor and donee; that it is either pushed in too far or is being shoved back and forth by the frequent application of the tip of the syringe.
2. The blood frequently clots in the syringe unless it is rapidly transferred to the donee.
3. In the effort to displace the air from the filled syringe a considerable quantity of blood is lost.
4. The syringes can only be again used after they are thoroughly washed, which necessitates an extra nurse for the purpose.
5. Twelve to twenty syringes are recommended, requiring an investment of about $100.00.
6. The cannulae must be flushed with salt solution to prevent clotting before the next syringeful of blood is ready, thereby injecting an unnecessary quantity of fluid in the recipient.
7. The assistant must be as expert as the operator for the successful performance of the transfusion.

To overcome these difficulties experienced in the syringe cannula method, several physicians interested in blood transfusion, notably Hustin, Weil, Levinsohn and Zingher, have reverted to the abandoned practice of adding various chemicals, used in the nineteenth century, to prevent the coagulation of blood, such as carbonate of ammonia (ten grains to the ounce) mag. citrate and sodium citrate 0.2 per cent (1 c.c. of a 10 per cent sol. to 10 c.c. of blood or two grammes to 1,000 c.c. of blood).

Hirudin, or extract of leech, has been used by Saterlee and Hooker to rinse out specially-devised apparatus to prevent the coagulation of blood, with good results.

The main advantage one may find in using medicated blood is that the recipient is not necessarily brought in proximity with the donor, and that the method is as simple as the injection of a solution of salvarsan.

The objections, however, are well stated by the very men who advocate the addition of drugs for the prevention of coagulation, namely that sodium citrate caused:

1. Transient polyuria.
2. Faint crenation of red blood cells.
3. Rouleaux formation.
4. After storing blood in an ice box for five days a mold was found on it so that it was not used.
5. An excessive dose gives cramps in guinea pigs.
6. In addition we must add, exposure to air, dust and germs while drawing it into a receptacle.
7. Chilling and reducing the temperature of the blood to that of the room temperature before it is injected into the recipient.
8. Blood which has been stored in an ice box for future use must be warmed to body temperature, before infusion into the recipient.

The advocates of sodium citrate claim that hirudin is not easily obtained and is poisonous.

Apparently the return to an agent which will prevent coagulation of blood is a confession of the want of a proper instrument that will enable one to do a blood transfusion with ease, accuracy and rapidity.

In the *Journal of the American Medical Association,* Feb. 13th, 1915, L. J. Unger submits a new instrument consisting of a stop cock which alternately connects a syringe for blood to the donor and at the same time a syringe of saline to the recipient; then by turning the cock the syringe with blood is immediately connected to the recipient and the syringe with saline to the donor. The cock has four outlets, to which is attached rubber tubing of various sizes,—the recipient's and donor's rubber tubes are paraffined. The instrument is supported by a stand to hold the cock stationary and to permit of its adjustment to various heights in conformity with the levels of the veins.

The stand is fixed to a table and by raising, lowering or rotating the pedestal to which the instrument is attached, connections to the cannula can be made.

The arrangement to fill the recipient with any quantity of saline solution has the same objection as the simple syringe cannula method.

In the hope of finding an ideal method to perform blood transfusion with ease, accuracy and safety which would overcome all previous existing objections found in other methods, I have devised a valve made of steel, nickel, brass, silver or gold.

It is in reality a combination of a direct and indirect method for transfusion of blood.

The valve consists of a central body with two arms going in opposite directions and weighs two ounces.

The central part is cylindrical, one and a half inches long and one-half inch in diameter. The middle of the upper surface of the valve has a thumb screw arrangement which moves the interior metal filling of the valve forth and back within a play of three-eighths of an inch.

The same forward and back movement can be arranged by a thumb screw attached to the side of the valve instead of on the upper surface.

The interior metal filling of the valve has two grooves equal to the size of the lumen found in each arm.

From the centre of the under surface of the valve a hollow cylindrical stem passes down for a distance of one inch. The canal circumference of the stem is just large enough to receive the tip of a record syringe holding 10 c.c., 20 c.c. or 50 c.c. of fluid.

The two arms going in opposite directions are connected to rubber tubing 3 inches long and lumen of 12 or 13 F. catheter,—to the distel end of tubing a metal tip is inserted. The tips of the two arms fit exactly a cannula and needle used for transfusion or any needle which fits a record syringe.

By moving the thumb screw arrangement on the top or side of the valve forth and back, the current of blood, or any fluid, can be directed into one arm or the other.

When one arm is open, the other arm is closed, and when the thumb screw is placed in the middle of the three-eighths-of-an-inch play, the current is stopped from both arms. Either arm can be used for donor or recipient.

The distance in the length and width of the distal ends of the arms of the valve is approximately the distance between the median basilic or cephalic veins of two adult arms placed alongside each other.

Other vessels such as the external jugular or saphenous can be connected to the valve with the same ease as the vessels at the bend of the elbow.

The alternate action of the valve is of advantage to the recipient in preventing a continuous large volume of fluid to suddenly overtax the heart.

During aspiration the heart has a chance gradually to distribute the added amount of blood without much exertion, thereby obviating cardiac dilation.

CANNULA.

There are a number of cannulae on the market. Those which were devised by Lindeman consist of an inner fine hollow needle which passes through a middle cannula. This in turn telescopes with an outer cannula. The middle cannula is 5 m.m. longer than the outer cannula and the inner needle is 5 m.m. longer than the middle cannula.

The cannula of Kaliski is an ordinary aspirating trochar and cannula. It pierces a bridge of heavy steel which raises the cannula up sufficiently from the skin to permit of the coupling of the syringe and its attachment without disturbing the position of the cannula in the vein.

To overcome some of the difficulties encountered in the handling and steadying of certain cannulae on the market I have devised a cannula. Two sets are necessary, one for the donor, the other for the recipient.

There are three parts to each set, which consists of a cannula, a hollow needle and an obturator. The needle and obturator fit snugly and telescope in the cannula. The obturator and cannula are of equal length, two and five-eighths inches. The hollow needle is one-half inch larger than the cannula and is slightly grooved and bevelled to a fine point.

The proximal ends of the needle and obturator are capped with stationary thumb screw caps. The cannula is capped with a receiver to fit the free ends of the arms of the valve or any record syringe.

The caliber of the cannula is the same as the arms of the valve and the same as the tips of a record syringe.

Three-quarters of an inch from its distal end the cannula is encircled by a ring one m.m. in thickness and a second similar ring is placed one m.m. away from it. The space between the encircling rings is just wide enough for receiving a suture of silk, linen, silkworm gut or catgut which is temporarily placed by passing through the skin of the donor or donee to hold the cannula in position, thereby preventing it from being shoved back and forth during the aspirating and injecting of blood.

OPERATION.

The valve, cannulae, needles and obturators are sterilized by boiling like as other instruments before operation. One, two or three record syringes of any size which will fit the cannula, usually 20 c.c., can be sterilized either by boiling or immersion in 95 per cent alcohol for a half hour and transferring afterwards to a basin of warm normal salt solution.

The vessels usually selected are the median basilic or cephalic, the external jugular or saphenous veins.

The area of operation is properly shaved, disinfected and coated with tincture of iodin. A tourniquet, consisting of a light weight rubber tube, is applied and allowed to remain on the donor during the entire time of the transfusion, but it may be temporarily loosened if the donor complains of numbness in the fingers and hand. A tourniquet must be applied to constrict the venous circulation, but not the arterial. The patient's arm is prepared in the same manner as that of the donor and a tourniquet applied until the cannula is inserted into the vein, when the tourniquet is removed. The donor and patient are placed in the recumbent posture, on separate tables, head to head, with the donor's left arm against the recipient's right arm. The arms are stretched to their full length and rest on a small table placed between two long tables. The eyes are covered with a towel. Both long tables should preferably be of the adjustable kind for the Trendelenburg or Fowler position, so that syncope or acute cardiac dilatation may be combated.

The donor's table should be about a foot higher than that of the recipient. This helps to increase the flow of blood by gravity. One operator manages the donee while another operator manages the donor. The operators stand or sit between the long tables, on opposite sides of the small table. The arm is gently massaged in the direction of the tourniquet. This helps to fill up the vein. The skin should be stretched in the direction of the veins to be punctured, by grasping the forearm with the palm of the left hand under the arm, using the thumb to steady and stretch the vein.

The cannula, telescoped by the needle, bevelled point upward, is grasped between the index and middle finger of the right hand with the thumb on the needle cap. The needle and cannula are pushed through the skin and into the lumen of the vein for about one-quarter to three-eighths of an inch and the needle is withdrawn for a short distance to prevent puncturing the vessel wall, and the cannula is then driven into the lumen of the vein until the ring on the cannula meets the skin and prevents it from going further.

When blood is observed coming through the needle, the needle is withdrawn and if the cannula is not against the wall of the vein, the blood will flow freely. The obturator is then inserted and a suture passed through the skin and tied between the two rings of the cannula to prevent it from slipping. If the blood does not flow freely through the cannula it is withdrawn slowly about one-quarter to one-half inch. This often establishes the flow and indicates that the tip was occluded by a valve or the wall of the vein. One should not aspirate or force saline through the cannula to ascertain if the cannula is in the lumen of the vein as this will infiltrate the tissues and distort the position of the vessel, in which case another puncture of the vein will be necessary.

With the donor and recipient cannula in position, the operator should remove the obturators and adjust the opposite ends of the valve to the receivers of the cannula, by a slight turn, to fit it singly.

A 20 c.c. record syringe is filled with normal warm saline and air forced from both arms of the valve before adjusting it in the cannulae. The thumb screw of the valve is then placed in the direction of the donor's arm after which the piston is drawn very slowly from the record syringe and the syringe filled with blood. The thumb screw is then changed toward the recipient's arm and the syringe emptied of blood rapidly. The operator then continues to alternate the direction of the thumb screw, filling and emptying the syringe without removing the same from the valve until the desired amount of blood has been transfused.

The injection of saline solution during the transfusion is not necessary. One syringe is all that is required for the entire operation. It is, however, advisable to have two or three syringes in readiness in the event of unforeseen difficulties.

Difficulties may arise from slight tilting of the cannula of both donor and donee, which brings the tips of the cannula against the wall of the vessel. Proper steadying of the cannula by the assistants will prevent such a contingency.

When changing a syringe I have found it advisable to have it filled with saline solution and allow some of the solution to pass into the donor and donee to ascertain whether or not the cannulae are in the lumen of the vessels.

By this method no blood is lost and no air is present in the syringe which cannot be said of other syringe methods. I have transfused eight cases by this method, one at the Jewish Hospital of Brooklyn, two at St. Mark's Hospital, New York City, three at the People's Hospital, New York City, one at my office and one at the home of a patient.

In all cases I was assisted by Drs. Benjamin Wolfert and Irving Gray. The first case at the Jewish Hospital was very impressive. Miss Alice Geary and Marion Boran operating room nurses assisted, Drs. Wm. S. Sugerman, Carl Kaplan and Louis A. Feldman, members of the house staff, were present.

My respected chief, Dr. J. B. Bogart, had delegated me in his absence to supervise a blood transfusion which was to be done on one of his service patients and while in the midst of the operation, by the Lindeman method, performed by Drs. Wolfert and Grey, I placed my valve between the cannula of the donor and recipient and within a few minutes transferred 320 c.c. of blood without changing the syringe or injecting salt solution in the vessels.

I now offer an apology to Dr. J. B. Bogart for having utilized his material without his knowledge until this evening for my personal benefit. I have not informed him intentionally in the hope of publicly expressing to him my sincere thanks, which I now do, for the numerous favors he has shown me during the time I had the good fortune of being associated with him.

Cases.

Case 1. Dec. 21st, 1914; Susie N.; donor, husband; quantity, kidney.
320 c.c.; Jewish Hospital; disease, traumatic hemorrhage from right

Case 2. Feb. 1, 1915; Bessie K.; 34 yrs.; donor, alien; quantity, 135 c.c.; place, People's Hospital, New York City; disease, ruptured uterine pregnancy.

Case 3. Feb. 3, 1915; Jacob R.; 29 yrs.; donor, alien; quantity, 300 c.c.; place, People's Hospital, New York City; disease, epistaxis two to three times a week for two years.

Case 4. Feb. 26, 1915. Jacob R.; 29 yrs.; donor, alien; quantity, 305 c.c.; place, at office; disease, epistaxis two to three times a week for two years.

Case 5. March 2. Susie N.; 34 yrs.; donor husband; quantity, 320 c.c.; place, at patient's home; disease, anemia following traumatic hemorrhage.

Case 6. March 17; G.; 60 yrs; donor, nephew; quantity, 200 c.c.; place, St. Mark's Hospital; disease, septic cellulitis of arm. To overcome post-operative shock.

Case 7. March 20; Nathan R.; 25 yrs.; donor, alien; quantity, 100 c.c.; place, People's Hospital, New York City; disease, purpura hemorrhagica.

Case 8. March 25; G., 60 yrs.; donor, alien; quantity, 280 c.c.; place, St. Mark's Hospital; disease, chronic suppuration. Anemia.

REMARKS.

Before performing blood transfusion by any method, it is advisable, except in urgent cases, to make a Wassermann test of both donor and recipient, agglutination and hemolysis test, blood pressure, pulse rate and careful examination of the heart, blood examination as to the number of red and white corpuscles, hemoglobin and coagulation test and a complete urine examination.

The operator and assistants should disinfect similar to the preparation for a major operation.

Donors should not be stout, not over thirty-five years of age and free from all disease.

When the veins are small or the individuals are fat, it may be of advantage to cut down and isolate the vein for about a half to one inch, using novocain or cocain to infiltrate the tissues or spraying ethyl chloride locally.

The valve will enable one to perform blood transfusion after a little practice with ease, accuracy and safety.

There will be no loss of blood of any appreciable amount, nor will it be necessary to fill the patient with a volume of salt solutions during the transfusion.

The washing of syringes by nurses during transfusion can be dispensed with and only a few syringes are necessary.

The formerly-considered major operation for transfusion of blood will, by the use of the valve, be converted to an operation of minor character which can be carried out in the doctor's office and in the patient's home, without a nurse and with but one assistant.

By the use of the valve there will be no necessity for medicating the blood in the hope of preventing coagulation.

In addition to the use of the valve for blood transfusion it could be used for potain syringe purposes in paracentesis, etc.

In conclusion the author wishes to state that he will cheerfully demonstrate and explain the technique of his instrument to any surgeon who may desire to use it on hospital patients requiring blood transfusion.

The instrument is manufactured by Kny-Scheerer Co., New York.

EDITORIAL

COMMERCIAL PATHOLOGY.

THE increasing dependence upon clinical pathology during the past decade due to the diagnostic help that comes from examination of the urine, blood, sputum and the sera, has brought home to many physicians a problem, the solution of which is by no means easy. While many have been adequately trained in laboratory methods and are qualified to make their own analyses, they find that time is lacking in which to perform these essential examinations, while others whose early teaching did not include laboratory diagnosis are compelled to employ outside help. Naturally the pathologists were the ones whose aid was first sought and many of them have found adequate employment along these lines. So long as a urinalysis was confined to the determination of albumin and sugar it was a simple matter for any physician to conduct these simple tests without feeling that he must make an additional charge for time and skill, but as the importance of other tests has been demonstrated, it has become customary and right to make a small charge to the patient sufficient to cover the additional time. Many physicians have felt, however, that they can not reasonably make an additional charge for urinalyses because of the financial limitations of their patients and as a result there has sprung up an increasing number of commercial laboratories that solicit this class of work. Their methods vary from a nominal fee for a single specimen to a fixed annual charge covering an unlimited number of examinations. One such laboratory in particular has developed a system that is worth studying in detail because of its possibilities for unlimited abuse. The concern in question is financed by a business head and employs helpers for whose qualifications it alone is responsible. It contracts with physicians, in return for an annual fee, to supply them with an unlimited number of urinalyses and makes a very modest additional charge for examinations of sputum, stomach contents, blood feces and serological tests, which fee it collects from the patient. It is said that by the use of a code word the physician may indicate the size of the fee to be collected from the patient, by which means the laboratory may collect three or four times its own charge. The excess is rebated to the doctor. A consideration of this contract opens up some interesting possibilities. If an unlimited number of urinalyses is guaranteed it is at once apparent that a man in active general practice may submit from three to four hundred specimens a year, an estimate that is by no means excessive. Suppose that one hundred physicians submit each one specimen a day the year round. One hundred specimens a day examined for albumin, sugar, urea, indican, diacetic acid, crystals, epithelia and casts at the modest allowance of fifteen minutes a specimen would require the time of one man working without pause twenty-five hours, or two men working twelve and a half hours, or three men working eight hours. If the annual fee were one hundred dollars, the average charge to a physician sending in one specimen a day would be twenty-seven and a half cents. These figures, which might be carried to an indefinite length, are quite enough to indicate that the man who depends upon reports from such a source can have no positive assurance of their value as accurate observations. Furthermore, if blood counts, sputum examinations and Wassermanns are made by the same staff that does the urinalyses it is manifest that the time to do them must be made by skimping the urinalyses. If one compares the average charges of qualified pathologists, it is apparent that for urinalyses alone, when an arrangement has been made by which work is paid for in bulk and not by the piece, a minimum charge of from sixty to seventy-five cents is not far from the average. While it may be reasonably claimed that business system, by employing a few men working full time on one class of work, is capable of turning out reliable results more cheaply than the individual working for himself, it must not be forgotten that the overhead charges for rent, materials, salaries and profits must come out of these same fees; and, unless there is skilled supervision, there is no way by which the quality of the work may be kept up and the results guaranteed. An experience with hospital internes doing similar work has demonstrated how difficult it is to get uniformly reliable results in routine urinalyses and, where there is no such incentive as pride of accomplishment, but only the desire to get through in the shortest time and with the least effort, it becomes increasingly manifest how unreliable such commercial reports are likely to be. If one may credit the report that at least one of these laboratories arranges to collect and return a rebate to the physician, another factor of a very different sort is introduced. If the laboratory advertises that its minimum charge for a complete blood count is $5.00, then it is evident that any charge above that figure is clear profit. If the physician is unable to do a blood count himself for $5.00 for lack of time, what right has he to expect his patient to pay a diagnostic laboratory $10.00 of which he receives $5.00; and, furthermore, if the laboratory can do the work for $5.00 and is willing to do it at that figure, what right has it to charge $5.00 to one man and $10.00 to another? When a physician finds that he must delegate an essential part of his work to some one else because of lack of time, he loses any right to take money indirectly from his patients for work that he himself does not do. The test of this matter lies in the answer to this simple question: "Doctor, are you willing that your patient should be told that part of the Laboratory fee is returned to you?" While it may be right and proper that the patient of means should pay a fee commensurate with his means and thereby assume part of the burden of administering to the medical needs of the poor, it is evidently unfair that in addition thereto the doctor should collect a rakeoff from the laboratory to which he has sent his patient. We have always felt with Mr. Tony Weller that such an attitude is like that of the coachman whose passenger has fallen from the coach, who while he dusts him off with one hand and solicitously asks him how he finds himself, picks his pocket with the other.

The recent appearance in Brooklyn of a number of clinical laboratories and the rumors that have been circulated regarding some of them, make it incumbent upon every physician to consider carefully how far he may depend upon their reports and whether he is willing to lend the countenance of his name to any which are not absolutely vouched for by the known integrity of the men who conduct them. The proposed action of the Health Board in moving to demand certain definite qualifications for this class of laboratories cannot be too highly commended. H. G. W.

THE REGENTS' BILL.

A PERIODICAL feature of each year's legislative programme at Albany is the attempt to increase the restrictions covering the practice of medicine particularly in respect to the control of the individual practitioner by the Board of Regents. The so-called Regents' Bill, introduced during the present session, contains some features that are decided innovations. Among these one notes a proposal to demand a yearly registration by each physician in the State, together with an annual registration fee of $2.00. The penalty for failure to register at the appointed time varies from temporary suspension to complete withdrawal of the license to practice. The bill contains an invitation for any person who knows that a physician is practicing without the proper registration, to inform the Board of Regents under the seal of secrecy.

Why should physicians be singled out for a yearly license fee? Is it not enough that the State has already exacted an original license fee of $25.00, for which it guarantees the right to practice during good behavior? This particular form of taxatión groups physicians with liquor dealers and tobacconists. Inasmuch as it confers a distinction and serves to differentiate physicians from osteopaths, optometrists, lawyers, school teachers and the rest of the *hoi polloi,* we should be proportionately grateful and permit our bosoms to swell with unalloyed pride; but, by reason of its placing an added burden upon a class that is already over-restricted by legislative enactment, it is time to call a halt. If doctors are to be taxed under the guise of an annual registration fee, then druggists, grocers, shoemakers, bakers and every other profession and trade must receive the like treatment. It is absolutely unfair to discriminate as this bill proposes and if for no other reason than this it must be beaten.

The bill also provides that the Regents may be empowered to take testimony in regard to alleged violations of the Act by a referee, who shall have the same power of subpoena as is enjoyed by the Supreme Court, and the hearings are to be conducted according to the ordinary court procedure. Power is given the Regents to determine from such a referee's report the question as to whether the person proceeded against is guilty of violation of the law and if they so decide the Attorney General of the State is to be called upon to proceed against him. The additional restrictions imposed upon the medical practitioners by these proposed amendments to the public health law, involving as they do such radical limitations of the right to practice and ignoring completely the various pseudo-professional sects, constitute further evidence of the meddlesome spirit that is becoming more and more evident with each session of the legislature. The question seems to be asked, "What are doctors anyway? What rights have they? They have no effective organization. Go to, let us spoil these Egyptians." It is high time for physicians to recognize the absolute need for effective political organization before the profession becomes so restricted as to make practice almost prohibitive.

H. G. W.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular meeting held at the building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, April 1st, 1915.

The President, James C. Kennedy, M.D., in the Chair.

Program.

Case Reports:
1. (*a*) Conservative Treatment of Diabetic Gangrene. Two Cases. Patient.
   (*b*) Intra-abdominal Use of Russian Oil. Two Cases. Patient.
   G. Frank Sammis, M.D.
2. (*a*) The Use of Russian Oil for Adhesions. Patient.
   (*b*) Osteomyelitis of Head of Humerus. X-ray. Operation. Patient.
   (*c*) Perforating Duodenal Ulcer. Repair. Gastro-Enterostomy. Patient.
   (d) Traumatic Rupture of Kidney containing Large Calculus. Nephrectomy. Specimen. Patient.
   (e) Tuberculosis of Breast with Glandular Involvement. Complete Operation. Specimen. Patient. John A. Lee, M.D.
   Case (*c*) Discussion by Dr. H. B. Delatour and Dr. John A. Lee.
3. (*a*) Mediastinal Tumor. X-ray plates.
   (*b*) Tumor of Sciatic Nerve.
   (*c*) Gastric Fixation. Patient. J. P. Murphy, M.D.

Paper:
"Blood Transfusion of Past and Very Latest Methods," with lantern slide illustrations. George I. Miller, M.D.

James C. Kennedy, M.D.,
President.
Roger Durham, M.D.,
Secretary.

Conservative Treatment of Diabetic Gangrene. Two Cases. Patient.

G. Frank Sammis, M.D.

Case 1. I have taken the liberty of changing the order of my cases and shall present the two cases of diabetic gangrene first. I think they comply with the present-day treatment of diabetic gangrene, which seems to be more medical than surgical. I find more medical articles than surgical on that subject.

The first case is presented because of its severity and long standing.

The patient, L. M., age 49, came to me in May, 1913, with redness, swelling and tenderness of the right foot and necrosis and gangrene of the second toe, the present condition having existed for two months. His temperature at that time was 103 and he showed symptoms of diabetes, loss of weight, etc. Urine analysis showed acetone and diacetic acid and two per cent of sugar. Dr. Duffield saw the case with me and it was on his advice that we were rather conservative in the treatment, although the extension of the inflammation seemed to go above the ankle. Under gas and oxygen anaesthesia I removed the toe and made incisions on the planter and dorsal surface of the foot for drainage. There was free pus there at that time and the tendons were quite extensively involved. The medical treatment consisted of calcium lactate and powdered opium. The analysis of the urine showed a reduction of sugar in the following proportions: 1.6 per cent five days later; nine days later there was a trace of sugar and two weeks later the sugar disappeared entirely. We consulted the patient about the length of time it might take to cure this condition and it was three or four months healing up, although his strength came back and he improved generally and his foot is now healed, as I will show, except for a little irritation which is caused by a little displacement of the great toe on account of a bunion.

Patient, J. B., 52 years old, presented practically the same symptoms—loss of weight, etc., and there was gangrene of the stumps of the great and second toes, these having been amputated. His sugar was 1.8 with acetone.

Under gas-oxygen anaesthesia I removed the heads of the tarsal bones of these respective toes and made openings in the instep and sole of the foot and packed with iodoform gauze.

The treatment was alkaline in the form of sodium bicarbonate until the acetone and diacetic acid disappeared, which was in about two weeks. Codein was given one-quarter grain, every four hours, but this was found insufficient and was increased to one-half grain every two hours. The sugar disappeared at the end of one month. I saw this man today. His sugar has re-appeared to the extent of one-quarter of one per cent, but his foot has entirely healed.

The two things which these cases emphasize to me are the strict carbohydrate diet. We say put a patient on a carbohydrate or diabetic diet. That doesn't mean all that "diabetic diet" should imply and I think that should be carefully thought of, and then increase the selected drug until its effects are accomplished. In that case the codein had no effect until repeatedly increased.

Intra-Abdominal Use of Russian Oil. Two Cases. Patient.

G. Frank Sammis, M.D.

The first case is that of C. S., age 22, single. On June 15th, 1914, the patient was referred to me by Dr. F. W. Moore. She had been operated on in New York one year previously for appendicitis. At that time there were extensive adhesions around the hepatic flexure of the colon; in fact, the entire ascending colon seemed to be involved up to and around the gallbladder. She did not improve completely after that operation.

She presented symptoms of partial obstruction, which I thought were due to adhesions, because the tenderness was marked around the region of the old scar.

On June 15th, I did a laparotomy and found an angulation and strangulation of the ileum in three places. This was relieved and the supposedly imported Russian oil was injected. It overflowed the edges of the wound, possibly because we injected too much, but we sponged that off with ether and the wound healed by primary union.

On September 24th, this same girl presented the same symptoms, the obstruction gradually increasing until it became complete. I again opened her abdomen and found extensive adhesions around the part where I had operated before. This was quite discouraging, but this was relieved and we came into a cavity in the pelvis and practically all of the oil returned absolutely unchanged. I have a specimen of the oil with me which I shall pass around and which is just about as clear and certainly not changed in any way as far as we know. It has, however, not been examined chemically. It is apparently as it was when it went in the abdomen three months previously, and the oil was pretty well walled off there. The abdomen in that part was practically free from adhesions. Oil was again injected and primary union again took place.

We changed frequently the position of the patient in order that the oil might come in contact with all parts of the abdominal cavity.

To-night—more than six months after operation—you will see the patient free from pain and she takes very little cathartic and that only every few days. She has gained in weight and does heavy housework. She is well.

The second case which I have to report is that of B. C., age 26. A case in the general service at St. John's Hospital. The patient complained of pain and tenderness, rigidity over the lower abdomen and diarrhoea and pain. The blood and urine analysis showed nothing to help us.

Under anaesthesia, vaginal examination revealed a mass which we endeavored to relieve by posterior vaginal section. There were several ounces of sero-sanguinous fluid expelled and the cavity was packed and the abdomen opened. The peritoneum was found to be greatly thickened everywhere and there were dense adhesions to what proved to be a multiocular cyst, apparently arising from the left ovary. This was removed with difficulty and certainly many raw surfaces were left as a result of it. Two ounces of oil were injected after the wound had been partially closed. There was a reaction in temperature for but one day, which I thought was no more than an ordinary reaction following a laparotomy. Six days later the stitches were removed and the wound healed completely.

I saw the patient today and she is perfectly well.

The points which I draw from these two cases are—apparently no reaction from the oil and no change in the oil itself. That seems to prove the claims of no change as it passes through the intestine and, as I have proven, not outside of the intestine, and it contradicts the statements of experimenters who have done work on animals. There were Sweet and Wilson who had several experiments reported in the Annals of Surgery. They injected as much as 200 c.c. in an animal, which may have been too much, but they had extensive adhesions and irritation and great reaction from all of their experiments; and Pope, of San Francisco, reports experiments on animals and dwells quite favorably on sodium citrate, but speaks disparagingly of petroleum. He said that his wounds did not heal and the oil emulsified or changed in some way so that it presented a grayish, creamy appearance and it wasn't satisfactory at all.

These are only two cases I have done, but I felt very enthusiastic. I think it might be indicated in a certain class of cases and I thought that in the first case nothing else could be done.

The Use of Russian Oil for Adhesions. Patient.

I was unable to get the patient in the case of tuberculous disease of the knee, but a patient in whom I used the Russia oil spoken about, to-night, showed up at my office today. I had operated on this man about three months ago and I am taking the liberty of replacing the case of tuberculosis of the knee by this patient so I think we will present him first so that we will have one subject to talk about.

This patient came into the hospital about three months ago. He is a Russian and the history was rather difficult to obtain, but as far as we could get it (he was a shoemaker by trade) he gave a history of two months previous to coming into the hospital of having pain over the region of the pylorus and gall-bladder and symptoms of hyperacidity and pain three or four hours after eating and he had great difficulty if he ate anything solid. The pain was severe and it seemed to us that he presented enough symptoms of ulcer of the stomach or duodenum to demand an exploratory laparotomy. He was operated upon eleven weeks ago and upon opening him up we found that he had no ulcer of the stomach or duodenum, but there was a distinct adhesive peritonitis joining the gall-bladder to the stomach. That adhesion—that veil-like adhesive formation—was carefully separated and the raw surfaces were covered over rather fully with sterilized Russian oil and we sewed up his wound. He got primary union and while he was in bed and in the hospital he seemed to have no symptoms whatsoever. We thought that we had produced a very satisfactory cure, but for the last month or so he has been having (when he returned to work) some more symptoms. He has no symptoms now after eating. In fact, the difficulty that he had has been entirely removed, but he has a certain amount of tenderness about the old site. He has had to work as a shoemaker and it is a question in my mind if this case should not be classed as an occupational disease. He is much better nourished than he was. We got primary union in the wound.

Osteomyelitis of Head of Humerus. X-Ray. Operation. Patient.

John A. Lee, M.D.

The other case that I wish to present to you is a case of osteomyelitis of the shoulder. I will read you the history:

Patient, A. C., age 37, widow, nativity U. S. Family history, practically negative. Past illness, negative. Present illness, one month before admission to the hospital the patient complained of pain in the left shoulder and shooting down the arm and hand. About the same time she had flashes before her eyes, etc. She came into the hospital and was treated on the medical side for about a couple of weeks, under treatment for rheumatism, with no result. While being treated for rheumatism a Wassermann was taken, which was negative. An x-ray was taken and I think you will be able to see that there is a slight evidence of inflammation in that bone there. We made an incision, as you see, there and cut down on the head of the humerus and we came upon this area of necrosis and found out that practically the complete head of the bone was diseased. We scraped out practically everything, leaving nothing but a shell, so much so that if you took an instrument you could drop it clear down to the elbow. That picture was taken three or four days ago and shows a regeneration of bone. There was some iodoform paste remaining in there. We swabbed out the whole area of bone with carbolic acid and alcohol and filled the cavity with iodoform paste and sewed it up tight. We got primary union. There is a distinct atrophy of the deltoid muscle. She had this atrophy at the time that she came into the hospital.

I said that while she was still under medical treatment a Wassermann was taken which was found negative. After the operation we decided we would take another Wassermann from spinal puncture and we took a spinal puncture and did a Wassermann on the spinal fluid and got a positive reaction. Since then she has had salvarsan and injections of mercury and has been getting along very well; in fact, she has had no pain in the shoulder since operation. Previous to the operation she had intense pain. She has good motion of this joint—everything except the deltoid, which is atrophied.

I think that one of the very interesting points about this case is the fact that we did not stop at a negative Wassermann; that we felt as though we probably had a specific inflammation here and the examination of the spinal fluid showed positive results and she has been improving very materially under anti-syphilitic treatment and, furthermore, her pain has been entirely relieved since the operation and I would like the opinion of the gentlemen present as to what I shall do with this deltoid; if we can improve the condition any more than it is at the present time. She has good motion and movement except that she cannot get any deltoid action.

Perforating Duodenal Ulcer. Repair. Gastro-Enterostomy. Patient.

John A. Lee, M.D.

History: Patient, W. B., age 51, nativity U. S., single. Social History: Moderately alcoholic. Venereal negative. Past History: Up to ten years ago, negative. Present Illness: For the past ten years the patient has had "stomach trouble" with very severe pain three or four hours after eating, a good deal of gas and hyperacidity.

Under medical treatment, bismuth, etc., these attacks would clear up and the patient would be free from symptoms, sometimes for two or three months. Lately, the attacks have been more frequent and the periods of remission have been shorter. There is some vomiting and he is always constipated.

Three weeks prior to admission to the hospital the patient had an attack with vomiting. There was no blood, but occasionally there were black tarry stools. On March 3d, the patient had a sudden acute attack of pain while at work. He was given peppermint water, but the pain became more severe and he was brought home and seen at 6:30 p. m. by Dr. James Pullman. Diagnosis: Ruptured gastro-duodenal ulcer made; consultation advised and seen by me at 8:00 p. m. At this time the patient had a subnormal temperature; pulse 100; hard, boardlike abdomen with pain all over; greatest point of tenderness over the region of the pylorus. The diagnosis was concurred in and immediate operation advised. The patient was brought to St. Mary's Hospital and operated at 9:30 p. m., less than six hours from the attack of pain.

Incision through the right rectus, opening the peritoneum. Milky fluid with the odor of peppermint gushed forth. The pylorus and duodenum were exposed. A large thickened ulcer was uncovered on the upper and inner surface, extending about one and a half inches in length, embracing the duodenum and pylorus, with a punched-out rupture in the center, through which contents from the stomach were issuing. The ulcer was inverted by a purse-string suture reinforced by a flap of mesentery. This inversion encroached on the lumen of the pylorus and a posterior gastro-jejunostomy was done. Two drains were inserted and the patient left the table in fair condition. For two weeks convalescence was uninterrupted and then the patient had a little temperature with pain for a few days which cleared up satisfactorily. The drains were removed in four days. For the past two weeks the patient has been eating practically everything except meat. He has had no pain after eating, very little gas and no hyperacidity, and his stomach feels better than in years.

Traumatic Rupture of Kidney Containing Large Calculus. Nephrectomy. Specimen. Patient.

John A. Lee, M.D.

History: Patient, E. W., age 49, nativity U. S., occupation plasterer. Past History: Negative. Present Illness: On June 24th, while employed at his trade, he fell four and one-half feet, landing on his left side and abdomen. He was unable to rise and suffered extreme pain and was in shock. He was brought to the Polyclinic Hospital in Manhattan, suffering pain, strangury and passing blood. A diagnosis of ruptured kidney was made after some tests and immediate operation advised and refused. The patient remained in the hospital two days, then demanded his clothes, walked over to the subway and came home to Brooklyn. He remained at home until the night of July 1st, suffering severe pain and passing blood. The patient entered St. Mary's Hospital and was seen by me on July 2d. Examination showed him in apparently good condition. There was a tumor in the region of the left kidney and ecchymoses over the left kindey area, abdomen and penis. The pulse and temperature were normal. As there seemed no immediate cause for haste, x-ray and cystoscopic examinations were ordered. The patient was seen by me first at 11 a. m. At 2 p. m. I was called on the telephone by the house surgeon, saying that the man was in shock with evidences of internal hemorrhage. He was immediately ordered to the operating room and I was up there shortly. We found him in collapse and pulseless. While taking the anesthetic I gave him 500 c.c. of saline intravenously which helped the pulse a little. The kidney was rapidly exposed, showing free hemorrhage, many clots and a broken-down kidney, the site of a large stone. The perirenal tissues and kidney capsule were distended with fresh blood. The vessels and ureter were clamped en masse with three large nephrectomy clamps, the kidney removed and the wound packed with towels and gauze and hastily sutured and the patient returned to bed in poor condition. Under the Murphy drip he recovered from the shock. The clamps were gradually detached in about a week and the patient made a complete but slow recovery.

Tuberculosis of Breast With Glandular Involvement. Complete Operation. Specimen. Patient.

John A. Lee, M.D.

History: Patient, E. R., age 42, nativity U. S., married, female, ten children. Past History: The patient has always had trouble with her left breast. She could not nurse any of her children from that breast. Present Illness: Six months before admission, the patient noticed some pain and enlargement in the breast. For the past two months she has had more pain at night. She was admitted to the hospital on June 24th. Physical Examination: Examination shows a large mammary gland with a hard mass in the center; enlarged glands palpable in the axilla. Operation: Removal of gland, portions of both pectoral muscles and axilla cleaned out. There was a complete chain of glands from the mammary gland to the axilla and enlarged glands even surrounded the axillary vessels. The axilla was cleaned as well as possible, but it was necessary to leave some diseased tissue attached to the vessels. The appearance of the growth and the glands, which were rather soft, led me to believe that I was dealing with a rapidly-growing colloid cancer and I felt the patient's chance of recovery was rather slim. I was very much pleased when we received the pathologist's report of tuberculosis of the breast.

Perforating Duodenal Ulcer. Repair. Gastro-Enterostomy. Patient.

John A. Lee, M.D.

Dr. John A. Lee, in discussion, said:

"I have only just one word to say about this perforating duodenal ulcer. This patient made a perfectly uneventful recovery and didn't show a particle of temperature above 99 or 99½ for the first two weeks, which I believe is largely due to the fact that we were enabled to get him so soon after his rupture. We have had a number of cases reported here in times past and a number of cases in which the patients died in which the diagnosis was made rather late in the disease. I think if we are going to save these patients we have got to have a good medical man, as I was fortunate enough to have, because the medical man very frequently sees these cases first, and this medical man of mine, instead of practising delay and giving the man a little morphine or something of that nature to quiet his pain, at the time that he first saw the case recognized the severity of it and also recognized the fact that something had to be done right away and, as I pointed out in my paper, we were enabled to get him on the table in less than six hours from the time of his first rupture. That, to my mind, is the only way in which we are going to cure these cases of perforating gastric or duodenal ulcer, and, surely, we are very fortunate in getting such a good result in this case, which I think is due very largely to the fact that the diagnosis was made as early as it was."

Dr. H. Beeckman Delatour, in closing the discussion, said:

"The question of drainage is an important matter in these cases and where we get cases as early as Dr. Lee did it has been proven that it is not necessary to drain. Dr. Lee's case would have made an absolutely uneventful recovery had he not put in the drains. The matter that escapes through so small a perforation, and even where there is a considerable quantity, can be simply sponged out as it seems to be non-infective. The cases seem to do better when they are not drained than when they are drained. I have had several of them that have come early after perforation; the material in the upper abdomen was cleaned out and the recovery was uninterrupted. I think, as Dr. Lee has said, the great trouble comes from the delay, from the continual exposure of the abdomen to the fluid that escapes."

Mediastinal Tumor.

J. P. Murphy, M.D.

History: About one year ago, slipped, getting off a car. Last ten months complains of pain in the back and left shoulder, with general lassitude and weakness. Consulted Dr. Baruch of New York, who made a diagnosis of neurasthenia. Was treated by hydrotherapy. Early in treatment was markedly benefited. Denies venereal history. Habits good.

Physical Examination: Rather a corpulent man; walks with a stoop and carries head well flexed toward the left; speaks in a hesitating manner.

The diagnosis of neurasthenia was accepted by me. He was referred to Dr. Keenan for laryngeal examination. He suggested the possibility of an aneurism compressing the recurrent laryngeal nerve on left side.

The man went south for January and February. About March 1st, he was referred to Dr. Tilney, who had Dr. Williams take pictures, which are presented to you.

You will note in these plates the absorption of ribs, on left-hand side.

Later the case was flouroscoped by Dr. Williams, and a tumor in the upper chest, near the median line clearly demonstrated. The case was then referred to Dr. Warren for seriological diagnosis, whose findings I will read you.

The man at present time is confined to bed, rapidly emaciating, running a temperature, and in a semi-typhoidal condition.

Comment: Primary and secondary tumor of the mediastinal area are among the rarer neoplasms.

Sarcoma may comprise any of the cell types; the small cell variety predominating. (Hertzler, Treatise on Tumors.)

Carcinoma when primary usually within the pulmonary region.

Epithelium: They are usually secondary.

Lymphomas: Tuberculosis, Hodgkins' Disease, syphilis may cause such.

Symptoms: Depend on situation, size and rate of growth, and the age of the patient.

In this reported case, fever, the absorption of bone and the emaciation probably indicate sarcoma.

The patient died early in April. The tumor had markedly increased in size—with absorption of the ribs over same. Findings and letter of Dr. Warren attached:

Dr. Jos. P. Murphy,
653 St. Marks Ave.,
Brooklyn, N. Y.

Dear Doctor:

I beg to report the findings of the patient, Mr. Chas. Delaney, who was at the hospital for observation early in March. You have a history undoubtedly better than mine and are acquainted with all its details. The physical examination shows a right pupil larger than the left but both reacting quickly to light and accommodation. Extra ocular movements are negative save for a nystagmus of the first degree of the extreme lateral excusion with a quick component to the side looked at.

The left upper lid shows a slight ptosis compared with the right. The right corner of the mouth is drawn back farther than the left. The left side of the neck is shorter than the right side tilting to the former. The left lateral lobe of the thyroid is also prominent. The thorax shows venous prominence over the left upper extending up the arm, over the shoulder, tortuous in places, apparently anastomosing with the intercostals. The left arm measured the same as the right. There are no glands in the left axilla and the epitrochlears are not felt. The thorax shows an asymmetry, the left upper is not as prominent and lags as compared to the right upper. Fremitus is increased beneath the right clavicle and is markedly diminished over the entire left side in the axillary region, being practically gone. Percussion at the right apex two fingers above the clavicle with the left barely reaching to the upper border of the clavicle and distinctly dull in note.

Beneath the left clavicle the note is likewise dull and this dullness extends downward over the front and in the axillary region. Auscultation gives tubular breathing at the left apex as compared to broncho-vesicular on the right. Below the third rib on the left breath sounds are practically inaudible as compared to exaggerated sounds over corresponding areas in the right. Spoken and whispered voice are definitely decreased over the entire right side but have lost the normal muffling quality.

Back: There is a scoliosis of the upper thoracic vertebrae with convexity to the right. This curve continues through the cervical column. The left shoulder is lower than the right. The entire left side moves less than the right on breathing and fremitus is distinctly decreased over the entire area. Percussion note over the entire left side is dull as compared to the note of its neighbor. Breath sounds at the left apex are diminished broncho-vesicular and markedly diminished vesicular at the left base. There is no Grocco's sign present and the cardiac area is not pushed to the right.

Heart: Precardium is prominent and there is associated with it in the first and second interspaces to the left of the sternum pulsation running the entire length of the clavicle. The right side is percussed a finger's breath to the right of sternum while the left cannot be percussed on account of dullness of that side. The apex impulse cannot be palpated. On auscultation, however, the first sound is heard best at the fifth intercostal space, and is short, distant and is followed by a slight systolic blow not transmitted to the axilla or base.

At the base A2 is less prominent than P2 in the pulmonary region; there is a systolic murmur heard loudest on expiration and transmitted along the line of the previous mentioned pulsation. The right radial has distinctly more amplitude than the left radial. There is no tracheal tug—no diastolic shock—no area of pulsation in the back and A2 is not increased.

His laboratory findings show a normal urine—of blood 4,000,000 reds, 11,000 whites with 70 per cent hemoglobin. The differential gives 26 per cent lymphocytes. His serology is completely negative, both blood and spinal fluid. His sputum shows a few cocci—no acid-fast organism could be found. His blood pressure was 140-90.

During his stay with us he ran a daily remittent temperature reaching between 100 and 103½. Respirations ran between 20 and 30. I believe the differential diagnosis lay between pulmonary tuberculosis, syphilis, new growth and aneurysm. In the absence of a positive Wassermann reaction—a positive history and loss of reflexes or other symptoms of specific infection, this can apparently be ruled out.

As regards aneurysms, the absence of a tracheal tug—the diastolic shock, increase in P2 and above all the absence of evidence of the x-ray and fluoroscopic examination, rules this out.

As regards tuberculosis the absence of fore-running symptoms, the distinct anemia developing in one year, the absence of organisms in the sputum and of apparent non-involvement of the right side which is the rule with so much involvement of the left side, speaks against this infection. In favor of new growth is the rather acute course, the marked anemia and emaciation, the distinct paroxysmal attacks of dyspena, the roentgenological findings, and the diffuse process over the pleura associated with a definite mass of the media stinum as determined by the fluroscope.

Pleural puncture, however, did not reveal a thickened parietal wall in either places at the left base but 500 c.c. of a serous fluid was withdrawn. It showed 40 gm. of albumen per liter, mononuclear cytology, no mucin—no blood—no organisms and the guinea pig inoculated does not show evidence of an infection up to date.

I feel, therefore, that the man has a new growth, possibly beginning in the pleura with its first metastasis in the media-stinum. Possibly a metastasis in the body of the fourth and fifth vertebrae (cervical) will explain the asymmetry of his neck and his neuritis. I believe this opinion is confirmed by the x-ray.

Hoping that we may have been of service to you and asking you if possible to occasionally inform me as to his progress, I remain,

Very truly yours,

L. F. WARREN.

Tumor of Sciatic Nerve.

Mrs. M. C. Admitted to Coney Island Hospital in January.

History: About six months ago noted a lump on left buttock, which is becoming larger, causing pain and difficulty in locomotion.

Examination: Small, thin, anaemic woman. Tumor in left buttock size of a grape-fruit.

Operation: Attachment of gluteus maximus served disclosing freely movable encapsulated tumor.

The capsule was opened by finger and tumor shelled out. In one place this capsule was agglutinated to the tumor. When snipped with the scissors a reflex twitching was noted. Following up the capsule, I found it was composed of the sciatic nerve, which was flattened out, making a complete capsule for the tumor.

The report by Dr. Dexter:

Service of Dr. J. P. Murphy.

Name: Elizabeth Carney. Date:

Specimen: A tumor attached to or springing from the sciatic nerve.

Findings: Gross: The neoplasm is about the size and shape of the normal adult kidney. Surface slightly irregular or undulating. On section a distinct and fibrous capsule is shown, its trabeculae running into the tumor mass. The body of the tumor has the appearance of a fibroma that has undergone in places some hyaline, or myxomatous degeneration. The tissue has a lawless arrangement in whorls and bundles with a jelly-like sheen or luster to the cut surface. Scattered throughout are small irregular pink areas that have the appearance of petechial hemorrhage.

Microscopic Appearance: The microscopic picture is that of a myxofibroma. In large part the type and groupings of cells are characteristic of the fibromata. In the myxomatous areas the connective tissue cells are distinctly embryonic in type (as is common in myxomata). There are present delicate branching connective tissue cells embedded in a mucoid matrix (an histology similar to that of Wharton's jelly of the umbilical cord and of embryonic tissue).

Between the more fibrous trabeculae is the true myxomatous tissue. This is made up of the branching cells each having one or more irregularly and usually deeply stained nuclei, about which nuclei is a large quantity of protoplasm. Between the individual cells are spaces which in the fresh condition have contained mucin and here and there are small groups of blood corpuscles (small hemorrhages), whilst rounded cells in fairly large numbers also may be seen.

The blood vessels traverse the connective tissue trabeculae. They are fairly numerous but their walls are poorly developed, being for the most part like that of capillaries or the vessels of granulation tissue. Nevertheless a vascular wall *is* present and in this respect the tumor differs from the sarcomata which it so much resembles.

No nerve elements are recognized in the histologic preparations and it is certain that this growth is not a true neuroma (which is comparatively rare) but that it belongs to that more common group of neoplasms springing from nerve trunks which includes the fibromata and the myxomata or fibro-myxomata.

The tumor under consideration, however, has the distinction of rarity in that it is far larger than is usual for tumors of that type, springing from nerve trunks.

THURSTON H. DEXTER, M.D.

Evelyn Meyer, 35 years old. Admitted to Coney Island Hospital on the 22d of January, 1915. History: Three months ago, the day after the birth of her last baby at Sloan Maternity, was taken with cramp-like pains in abdomen and concomitant diarrhea. This condition persisted during her post partum convalescence in that institution for a period of two weeks.

When she returned home was free from these symptoms for three or four days.

She was treated for this condition at Williamsburg Dispensary. She lost her appetite; the abdomen became distended.

She was admitted to medical service of the Coney Island Hospital, and kept under observation and treatment there for seventeen days.

X-ray plates by Dr. Wallace.

Transferred to surgical service.

You will note in the X-ray plates that the colon is in the pelvis and that the cecum is enormously distended. Unfortunately the stomach does not show in the plate.

We assumed this ptosis of the colon was due to a ptosis of the stomach.

Operation February 15, 1915, assisted by Dr. E. B. Wilson and staff.

On opening the abdomen, the stomach was found to be distended with gas and markedly prolapsed. This was relieved by the stomach tube.

The head of the cecum and ascending colon was plicated. The anterior wall of the stomach was fastened to the anterior abdominal wall by a series of sutures.

The woman made a smooth recovery.

The second X-ray plate taken by Dr. Wallace shows the condition of the viscera when the woman left the hospital.

The results of operation up to date have been particularly satisfactory. Patient presented.

In perfect health May 14, 1915.

Comment: From the time Glenard published his paper on Abdominal Ptosis, this subject has brought out an enormous amount of literature.

In 1898, Duret of Lille, suggested and reported the first case of *gastro plexy.*

In the same year, Rovsing, of Copenhagen, reported cases; his method differing from Duret in technique.

In 1901, Dr. William A. Lane, of London, removed the colon for this condition and reported most excellent results.

R. C. Coffey reported cases of operative interference, with good results.

The October number (1912) of Surgery, Gynecology and Obstetrics, publishes a classic paper by Coffey, on "The principles underlying the surgical treatment of gastro-intestinal stasis, due to causes other than structural or ulcerative conditions."

In this article, the author quotes extensively from "Huntington's Anatomy of the Peritoneum and Abdomen," which work is taken up from the standpoint of comparative anatomy and embryology.

He warns the surgeon, that bringing forward this subject, one of the most dangerous fields in surgery is opened.

It is to be remembered that the X-ray pictures in these conditions differ with the posture of patient.

The woman enjoys perfect health, June 15, 1915.

J. P. Murphy, M.D.

This is a specimen of intussusception removed from a man at the Coney Island Hospital on the 17th inst., March, 1915.

The man is doing nicely, but for obvious reasons, is not able to come here this evening.

My apology for showing is, that it is one of the best specimens I have seen—and of comparatively recent removal.

History: A. K., 34 years. Was suddenly taken with pain, acute and cramp-like, over entire abdomen, on March 13th.

He had vomiting, with no relief. Bowels responded to enema *once* and once only. Vomiting persisted; projectile in character, with bad odor.

Admitted to Coney Island Hospital late the night of the 16th of March. Abdomen distended to capacity. Immediate operation. Free, foul smelling fluid in abdominal cavity. Gut swollen to capacity above site of intussusception.

An attempt was made to reduce same with prompt rupture. No time was lost. A resection of the bowel at site of intussusception and end to end anastomosis.

Abdomen flushed with normal saline. Much difficulty in returning viscera into abdomen.

The man made a comparatively smooth recovery. He left hospital *cured.*

Comment: Intussusception is a very common form of intestinal obstruction. Classifying all varieties of obstruction together, it forms more than one-third of the whole. (Treves.)

Regular meeting of the Society held at the building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, May 6th, 1915, 8:30 p.m.

The President, James C. Kennedy, M.D., in the Chair.

Program.

Case Reports:
1. (*a*) Tuberculosis of the Kidney. Patient. Photograph.
   (*b*) Osteomyelitis of the Femur. Operation. X-ray. Model. Patient.
   (*c*) Hygroma of the Neck. Patient.
   (*d*) Phleboliths. X-ray plates.
Henry F. Graham, M.D.
Wm. H. Maddren, M.D.
2. Acute Gangrenous Pancreatitis.
3 Gastric Ulcer: Case reports (2) and patients (2).
R. S. Fowler, M.D.
4. (*a*) Acute Appendicitis. A unique case.
   (*b*) Cholecystectomy: Two cases.
   (*c*) Recurrent Sarcoma of the Lower Extremity.
Alexander Rae, M.D.

Paper:
"Some Phases of Calculous Diseases of the Kidney and Ureter."
Radiographs. P. M. Pilcher, M.D.
Discussion by Dr. Henry F. Graham, Dr. William Linder and Dr. P. M. Pilcher.

James C. Kennedy, M.D., President. Roger Durham, M.D., Secretary.

Tuberculosis of the Kidney. Patient. Photograph.

Henry F. Graham, M.D.

Miss F. W., age 24, designer.

Family History: Grandfather on father's side had tuberculosis. One uncle died of hasty consumption. The patient had no contact with these or any other case of tuberculosis.

Past History: She had a nervous breakdown at the age of 15; measles, mumps and chickenpox.

Present Illness: The present illness started two years ago with uneasy sensations in the bladder. There was no increased frequency of urination. Pelvic examination was negative. She had no pain in the loin at that time. She received a course of tampons without relief, and all treatment was directed toward her bladder and other pelvic organs. Nine months later, she began to have a dull ache in the loin radiating downward along the nerves toward the symphysis. One year after the onset, urination became more frequent and a soreness developed in the bladder on walking. The appetite was always good, but she lost weight. There was never any visible blood in the urine, but it was cloudy. There was never any colicky pain. She gradually became worse. At this point Dr. Hatton was consulted and made the diagnosis of tuberculosis of the kidney.

Cystoscopic examination showed pus and tubercle bacilli coming down the right ureter and clear urine from the left side. The bladder was ulcerated at the orifice of the right ureter, which was of the golf hole type—intense cystitis. Dr. Harris kindly made this examination for us.

Operation at the Methodist Episcopal Hospital, July 22nd, 1914—oblique kidney incision. The operation was not a difficult one. The kidney showed marked involvement of the pelvis and calyces. The ureter was much thickened. A cigarette drain was inserted. There seemed to be primary union, but in a few days (about ten) the wound opened up and fell apart, showing little repair on the part of nature. This gradually healed up until now there is only a small short sinus left. This does not seem to lead down to the stump of the ureter, which was injected with carbolic and ligated low down in the incision. Convalescence was about as usual. Her lowest post-operative weight was 107. The wound was exposed to sunlight. She left the hospital on September 16th—a period of twenty-five days in the hospital. On September 22nd only six days later, she returned with a pyelitis of the opposite kidney. Temperature 104, chills, malaise, etc. The urine was loaded with pus cells and a culture showed the colon bacillus. This cleared up rather promptly under urotropin and benzoic acid, and on October 14th she again left the hospital and was cared for at home. On October 15th, she returned once more with the same symptoms and temperature. This time we injected a guinea pig—result, after many weeks, negative. We also took an x-ray of the left kidney—result, negative. Dr. Harris gave her a series of injections of argyrol into the pelvis of the left kidney. There has been no further trouble with the kidney pelvis and the bladder symptoms have almost entirely disappeared. She has had a series of tuberculin injections, carbolic into the bladder, as recommended by Rovsing, only a weaker solution, general hygiene and hydrochloric acid, minim 40 in a glass of ice cold milk three times a day, also catharsis and lactobacilline to kill off some of the colon bacilli. Weight in December, from 127 to 130 pounds. Urine, January 19th, 1915—1010, cloud of albumin, a few leucocytes and epithelial cells, no casts, urea 3.28 grains per ounce, albumin one-half gram per liter, quantities of urine excreted, 116, 104, 110, 98, 108 ounces daily. She was drinking from six to eight glasses of water daily. Urine, April 13th, 1915—1012, heavy cloud of albumin, occasional hyaline cast, a few pus cells; total quantity, 50 ounces.

Osteomyelitis of the Femur. Operation. X-Ray. Model. Patient.

Henry F. Graham, M.D.

S. J., age 27, tool-maker.

When 14 years old he was said to have had "rheumatic fever" and an infected lower femur with many sinuses. Some years later he had trouble again with the lower femur and was operated upon for it. It had been healed up and well for a long time until a little more than a month ago when it began to pain again. Two and a half weeks ago he had severe pain and a high temperature and this was repeated a week ago.

Examination, October 6th, 1914: The inner side of the lower thigh shows a scar about 6 inches long, firmly attached to the bone. There is a posterior displacement of both bones of the right leg and contraction of the hamstring muscles prevents extension beyond an angle of 45 degrees. The lower end of the femur is very tender over the inner surface, and there is great tenderness and bulging in the popliteal space. Temperature 100 degrees and pulse 60 X-ray plates showed a softening in the medullary cavity about 8 inches long.

Operation October 9th, 1914: Incision 8 inches long encircling the old scar, which was excised. Two soft cavities filled with granulation tissue were found. The outer surface of the bone was rough and the periosteum was thickened.

The bone was converted into a shallow trough by chiseling away the anterior and inner surfaces and scraping away all the medullary tissue. The scar tissue was incised transversely when necessary to relieve tension. The soft tissues, which now dropped loosely into the cavity, were crowded firmly into the trough and held by sutures and packing (marsupialization). At the lower end two hinged flaps of tissue were mobilized, sutured together and packed against the bone by the use of gauze. The abscess in the popliteal space was opened up and drained. Silkworm gut sutures to the skin. At the end of three weeks the entire wound was healed and all dressings were left off. There has been no further trouble. January 18th, 1915: The patient is back at his old job again as a machinist. This is three months after operation. He has been walking on the leg since. This case is reported because so many cases of osteomyelitis have been seen that have been subjected to repeated operations and have been incapacitated for work for many months following the usual operation of curetting the bone and packing with gauze.

The method used in this case is not an original one. Many others are using it. I merely wish again to emphasize the fact that bone is a living tissue and as such must be provided with nourishment and not treated as a carpenter might treat a block of wood. And when it comes to providing nourishment, iodoform gauze or any other form of gauze ranks rather far down on Dr. Wiley's or any other food expert's list.

Hygroma of the Neck. Patient.

Henry F. Graham, M.D.

F. B., age 24, has had a tumor in the right side of the neck for about seventeen years. Sixteen years ago this was opened by an incision. After this he was free from symptoms for eight years. At that time he had some medicine rubbed into the skin and the tumor again went away. Two months ago a tumor again appeared. It would swell up and then later disappear again. Examination shows a multilobular, somewhat tense tumor occupying the base of the neck on the right side. It was considered to be a case of tuberculous glands of the neck, but the blood count showed 27,000 white blood cells, 39 per cent polys. 7 per cent large mononuclears, 4 per cent small mononuclears and 50 per cent eosinophils. There were no symptoms of trichinosis and there were no ova of parasites in the feces.

Operation showed a tumor mass shaped much like a bunch of grapes and composed of 15 or 20 thin walled globular compartments filled with a straw-colored fluid This tissue ran down posteriorly between the scapula and the chest wall. It was pulled up and ligated as low as possible, but it seemed as though some minute sacs about the size of small peas, were left behind. A blood smear taken the last of March showed a normal percentage and no eosinophils. The white blood cells seemed normal in number.

These lymphatic cysts "are always congenital. They originate below the deep fascia but a portion may make its way through and become subcutaneous." They have a tendency to shrivel and disappear. They have been known to rupture by a child falling on them. "Their proneness to spontaneous cure explains the rarity of such cysts after puberty." Complete removal may be impossible.

Phleboliths. X-Ray Plates.

Henry F. Graham, M. D.

Mrs. C., age 35.

Family and Past History: Negative. The patient was never sick before.

Present Illness: Seven months ago she had her first attack of pain. It came on suddenly and was located in the right loin. It lasted about five hours. The pain was a dull ache and was not paroxysmal or sharp. There was little radiation. It was a steady pain and did not come and go. It did not double the patient up. The urine was dark colored and deposited a heavy white sediment on standing. She vomited during the pain. Since the onset there have been two similar attacks. She was sent in from the "Island" with a diagnosis made from x-ray plates of three stones in the ureter. Cystoscopic examination by Dr. Harris:

Bladder normal; slight edema of both ureteral orifices; no scratch on the wax tip; urine dropped twice as fast from the right side as from the left; it was very pale and slightly turbid; phosphates were much in excess; urea about normal; the phthalein test showed no color from either side in twenty minutes; renal function evidently much impaired. The x-ray plate showed three shadows in the pelvis. An x-ray catheter proved that these shadows were some distance from the ureter.

Diagnosis: Chronic nephritis and phosphaturia. The history in this case was not a good one for stone in the ureter and immediately suggested a careful examination before considering operation.

Acute Gangrenous Pancreatitis.

Wm. H. Maddren, M. D.

Mrs. S., aged 68, referred by Dr. Michaelis. The patient was first seen by me at her home about 10 a. m., January 1st, 1915.

Complaint: Persistent vomiting, constipation of twelve hours or more and pain in the abdomen.

Present Illnesss The patient was taken sick suddenly after breakfast on December 31st, 1914, with pain in the abdomen and vomiting, attributing the attack to having eaten grape fruit for breakfast. She had had a movement of the bowels shortly before the onset. She was seen first by Dr. Michaelis on December 31st and a dose of calomel was administered. No results were obtained, the vomiting continuing, though not being projectile or fecal in character. The temperature was about 99 and the pulse about 100.

Examination: Temperature and pulse about the same as the day previous. Vomiting continued and no movement of the bowels occurred. The patient would have intervals of an hour or more without vomiting. Palpation of the abdomen showed some tenderness along the right rectus muscle, not specially localized, little or no rigidity and apparently no distention. No mass.

Past History: About 1910 the patient had an attack similar to the present with vomiting and constipation and general abdominal pain lasting for about twelve hours. She was ordered to bed and (so the patient says) the case was pronounced one of gastritis. After twelve hours, improvement set in, the vomiting ceased, the bowels moved and the pain decreased. Convalescence lasted about two weeks. Aside from this, the patient recollects no other illnesses.

Treatment: Hypodermic of morphin; enema without result. She was seen again early in the afternoon of January 1st. The temperature had risen to about 100.6 and the pulse to 108. The patient had the appearance of being more ill than in the morning. Operation was decided upon and the patient was removed to the Harbor Hospital.

Operation: January 1st, 1915. Right rectus incision over the appendix. The appendix was apparently not diseased, but there were a few old adhesions. These were freed and the appendix removed. The incision was extended upward. There were many dense adhesions binding the ascending colon to the right wall, but there was no definite obstruction found, though a partial obstruction resulted from one dense band half way between the cecum and liver. A quantity of sero-sanguinous fluid, perhaps six ounces, was sponged away, but the origin was not ascertained. There were a few whitened areas in the fat of the mesentery and the possibility of fat necrosis was considered, but thought not to be such. There were only three or four such areas which were not larger than rice grains. The band causing the partial obstruction contained two vessels of a size requiring ligature. The band was cut. Around the liver and pylorus the adhesions were old ones and so dense as to preclude the possibility of freeing; so, as the obstruction was thought to be released, no further manipulation was done except to attempt to feel the pancreas, which was not satisfactory, due to many old adhesions. (Dr. Maddren, Dr. Barber, Dr. Michaelis.)

Evening, January 1st, 1915: Recovery from anesthetic satisfactory and rapid. Fowler position. Hot water in small quantities by mouth. Throughout the day of January 2nd enemas given were expelled with a large amount of flatus and diminishing amounts of fecal material, the patient vomiting a small amount with each enema. Pituitrin was given in an attempt to establish peristalsis. January 3rd, 1915: The patient slept fairly well at intervals; enemata, every two or three hours, resulted in the expulsion of a large amount of flatus and a small amount of feces. The patient vomited only with enemas and then a small amount of greenish fluid. A large amount of gas was expelled by mouth.

January 4th, 1915: The patient's temperature appeared satisfactory, the fall to normal having been steady since the first day. Her pulse, however, showed a sharp rise from 88 at 4:00 a. m., to 120 at 4:00 p. m., without however, any corresponding rise in temperature. With the exception of the increase in the pulse, January 4th seemed a satisfactory day. January 5th, 1915: Early. The vomiting increased. The distention having subsided almost entirely, less gas was expelled with the enemas. Later in the day the distention returned, no results were obtained from the enemas, and the vomiting became more frequent.

Second Operation: January 5th; the abdomen was opened (the first wound) by removing the stitches. The possibility of pancreatitis was still borne in mind. Palpation disclosed a mass thought to be pancreas. No obstruction was found. A median line colostomy was done. The wound was closed. January 6, 1915: Patient had suppression of urine and failing heart. Died at 2 p. m.

Post mortem a half hour after death. The wound was opened. There was no leaking from the colostomy apparent. The spots seen on the mesentery at the first operation were more numerous—perhaps eight or ten seen. The pelvis was clear. There was considerable sero-sanguinous fluid sponged out. There was no obstruction to the large intestine. The omentum was raised and the stomach pulled up after freeing many dense adhesions, and a large hard pancreas discovered, having a gangrenous appearance (with a foul odor) throughout the whole organ. A part was removed for microscopical examination. The duodenum was completely obstructed where it crosses the spinal column, by the inflammatory thickening at and about the head of the pancreas. No stone was discovered. There were adhesions (old) all around the pylorus, binding the cap to the liver and all the surrounding tissues. No chest examination was permitted.

The salient points in this case are: Previous similar attack with recovery. Vomiting persistent, not projectile and never fecal.

Apparent improvement after the first operation. Apparently good results from the enemas.

The microscopical findings reported by Dr. Terry, of the Kings County Hospital, are as follows: "*Nature of specimen:* The specimen is a pancreas, which measures 5 x 2½ x 2¼ cms. The specimen is yellowish-gray and on section is found to be very friable. The cut surface is grayish, but is mottled here and there with brownish areas.

"*Pathological report:* The pancreas is in large part necrotic. There are at the periphery of the necrotic tissue islands of pancreatic tissue that stain fairly well. Each island is surrounded by necrotic pancreatic tissue which is, to a slight degree, infiltrated with polymorphonuclears which stain rather poorly. No hemorrhages into the pancreas and no evidences of an acute suppurative pancreatitis are seen. There is, however, some fat necrosis. It seems possibly significant that the most advanced necrosis is peripheral. *Diagnosis:* Pancreas undergoing necrosis.

CASE NO. 2. C. G., age 32, brewer, was admitted to the German Hospital, Nov. 4, 1914, with a history of having fallen from a height of seven feet into an empty wooden tank and striking the upper part of his abdomen against the edge of a board. He was unconscious for a few minutes. A few minutes later he vomited bloody material and fainted; this vomiting of bloody material and faintness was repeated in one hour. Examination showed muscular resistance over the upper half of the abdomen. Inquiry into his previous history developed that during the past five months he had had some stomach trouble particularly gas after drinking beer. He had not, however, been incapacitated from work. He was kept under observation for a few days during which time there was no further vomiting of blood but the passing of enormous quantities of partly digested blood per rectum. On account of his anæmic condition operation was delayed. Radiograph showed extensive ulceration of the stomach. The patient's general condition improved and operation was performed December 21st. This showed a large ulcer involving the lateral curvature of the stomach and anterior wall, and most of the cardia. There were many adhesions and the condition was inoperable so far as resection was concerned. A jejunostomy was performed. Through this tube the patient was fed, beginning the day after operation to April 9, 1915. During the latter part of this period soft diet was also allowed by mouth and from time to time during this period was allowed to drink alkaline solution to quench his thirst. The jejunostomy healed spontaneously in a few days after removal of the tube. Up to the 11th of March, 1915, there was slight resistance on the left side over the region of the ulcer and adhesions. A few days later this resistance entirely disappeared and has not recurred.

Examination this evening shows the patient to be in apparently perfect health; he is taking his usual diet and complains of no stomach disturbance. Palpation does not reveal any of the previous evidence of extensive ulceration.

Paper: "Some Phases of Calculous Disease of the Kidney and Ureter." Radiographs.

P. M. Pilcher, M.D.

DR. HENRY F. GRAHAM, in opening the discussion, said:

"Dr. Pilcher showed one picture there of a very small stone in probably a good kidney, a stone which had not interfered very greatly with its function. He showed a picture of a stone in the opposite kidney (a large pyonephrotic kidney) which was not functionating at all. He recommended in that case the removal of the small stone from the good kidney first and then operating on the bad kidney. It seems to me that most of us would not have agreed with him in that particular case, if I have the facts correctly. Most of us would have taken a chance on the one with the small stone, removed the bad pyonephrotic kidney and left the other alone until later."

DR. WILLIAM LINDER, in discussion, said:

"I fully agree with Dr. Pilcher on the rationale of that treatment.

"Some years ago a patient came under my care with a history of renal calculus on the left side, long severe, untreated surgically. He had had recurrent attacks. He had had about six months complete rest and when he was referred to me he had severe renal colic on the right side and anuria for thirty-six hours. The same question came up in connection with my case; that is, as to which side we should attack. He had a complete history on the left side and when he came under my care he had anuria with a history of renal colic on the right side. I reasoned the same way—that the left kidney was possibly one-half or three-quarters dead, and I, therefore, did not want to resuscitate that, but what I did want to do was to save the healthy side, so I accordingly removed the stone from the right side and the patient made an uninterrupted recovery. I believe that that principle is very well illustrated in Dr. Pilcher's case. It is important to leave the kidney that is not functionating so well alone and direct our attention to the good kidney, resuscitate that kidney and then you have ample time to attend to the other and bad one if it should trouble you. If the kidney is entirely destroyed you can do a nephrectomy"

Dr. P. M. Pilcher, in closing the discussion, said:

"That is a very interesting point that Dr. Graham brought up and I think it needs a good deal of discussion before it is decided. That is simply the way I have approached it and I do not feel at all sure that it is absolutely correct.

"In the particular case that Dr. Graham spoke of it seems to me, from the shape and size of the stone, that it will not pass, although we have had stones as large as that and as irregular as that pass, but if you come to the point where you feel you have to do an operation, I feel that I should rather do a simple operation on the stone in the right kidney first when it is small then I would attack the badly diseased and destroyed kidney and remove that, and then, if any accident occurred to me during the removal of the stone from the other side I wouldn't have any chance of saving the patient."

Cholecystectomy. Report of Two Cases.

Dr. Alexander Rae

The present day status of gall bladder surgery may be seen in the established routine practice of removing it, except where it is useful as a medium of drainage for some deep-seated supurative process. Even then, the drainage having accomplished the desired result, the gall bladder is removed. In the two cases which I bring to your attention, however, a distinct indication was present for the excision in each case; in one, an anatomical, in the other, a pathological condition.

Case I. In June, 1913, a young Chinaman had been under observation for several days in the Medical Ward. Since admission he had been suffering moderate, continuous pain, with paroxysms of severe colicky pain, in the epigastric region; temperature ranging from 100° to 103°, and a moderately increased pulse rate: there was slight jaundice. Examination of the abdomen; inspection showed only a slight fullness over and just below the region of the gall bladder; palpation revealed a moderate increase of resistance beneath the right rectus muscle, from the costal margin to near the umbilicus. A diagnosis of cholecystitis with or without gall stones was made, operation offered and accepted.

Operation: Through an incision in the right rectus muscle, portion of a fluid tumor, evidently a distended gall bladder presented; what seemed to be the lower end of this tumor was readily reached by the finger; the lower portion of this presenting area was incised and a considerable amount of, first,—clear fluid, then muco-pus, then bile was evacuated; with the finger in the cavity of the gall bladder it was soon discovered that the fundus was deep down (4 inches), among the intestines, pointing directly backward; no gall stones were present. As a probe did not readily enter the cystic duct it was decided to deliver the gall bladder, straighten out the organ and try again to demonstrate the cystic duct; the opening in the gall bladder was closed by clamps; gauze and gloves changed and by finger dissection aided by traction, the gall bladder was freed from the intestines and delivered; the narrow proximal end of the gall bladder was now readily demonstrated at the border of the liver, and a probe now readily entered the cystic duct.

What we had to deal with, therefore, was an abnormally situated gall bladder; the distal end of the cystic duct at the border of the liver; an elongated distended gall bladder; angulated at its proximal end; making a right angle at this point; occluding the cystic duct at the angulation; the fundus dipping backward and adherent on all sides to intestines.

Excision was the only treatment; this was readily accomplished by passing a chromic catgut ligature around the cystic duct; catching up the peritoneum on both sides to prevent the ligature slipping and removing the gall bladder with the cautery, after placing a clamp distal to the ligature; the wound was closed after placing a small drain at the upper angle; this was removed in 36 hours. The recovery was uneventful.

Case II. Miss B., age 42 years, single. First seen December 23rd, 1914, 11 a. m. For three days and nights patient had been suffering from severe pain, at times colicky, in the epigastric region; the onset was accompanied by vomiting which recurred several times; temp. 102°, pulse 84; bowels had moved satisfactorily during the forenoon. Inspection of the abdomen furnished no information; a flat non-distended abdomen presented. An attempt to elicit a reflex by stroking the abdomen with the finger from the iliac region upward on both sides showed a distinct difference on the right side; the reflex here being decidedly marked. On palpation, however, pain in the region of the gall bladder was increased and a sense of resistance over the right rectus muscle was elicited which extended down as far as the umbilicus.

The abdominal wall outside of the rectus muscle including the iliac region could be depressed without resistance. Deep finger point pressure, over McBurney's point, elicited pain but other local signs of appendicitis were absent. At a second visit at 5 p. m. diagnosis of cholecystitis with greatly distended gall bladder, probably with gall stones, was made. Operation advised and accepted.

Operation: Incision through the right rectus muscle disclosed an elongated gall bladder, about three inches in diameter, extending to the umbilicus. Fundus of gall bladder was delivered, incised, and contents allowed to escape, gall stones removed. Specimen, gall stones exhibited. One large stone, seen among the collection, having several protuberances, was so firmly imbedded that it could not be moved by the scoop and it was necessary to assist with the fingers outside the gall bladder before it could be dislodged. The fingers outside the gall bladder demonstrated that little else than peritoneum covered this stone, the wall having been thinned or pushed aside until perforation threatened. A probe could not be passed through the cystic duct.

This pathological condition was decisive for excision, which was proceeded with and readily accomplished, in the same manner as in Case I. In this case the technique was much simplified by the elongation and dragging downward of the gall bladder, making it easy to ligate the cystic duct.

Dr. E. S. Judd of the Mayo Clinic calls attention to two dangers in removing the gall bladder: 1. Hemorrhage from the cystic artery, from the slipping of a ligature. II. Injury to the common bile duct. The first may be avoided by catching the ligature into the peritoneum in one or two places and tying the same securely; the second by restraining one's ambition to remove the last quarter of an inch of the cystic duct. To leave a short portion does not interfere with a successful outcome. On examining the specimen it was found that the cystic duct at the site of the imbedded stone and proximal to it, was obliterated, all that was left being a fibrous tract; this evidently the result of pressure by the imbedded stone.

An Unusual Case of Appendicitis.

Case III. Patient referred by Dr. Gordon Hall. Miss A, age 19. Had been seen a week or ten days before by Dr. Hall, with symptoms of appendicitis. At this second visit the symptoms were definite and the diagnosis of chronic appendicitis confirmed. Operation advised and accepted. As the interesting feature of the case was the pathological findings, details of technique may be made brief. Incision through outer border right rectus. As a finger introduced developed nothing of an appendix at the usual site, the cecum was delivered and its base found to be entirely free from an appendix or any area that gave the appearance of an appendix having been present; the cecum was replaced and search made over the outer aspect of the ascending colon and there was developed by finger dissection and brought out into the wound what had all the appearances of a thickened gangrenous appendix.

It came off from the outer and posterior aspect of the large bowel opposite or just above the level of the ileo-cecal valve; was 2½ inches in length and ½ inch in diameter; had no distinct mesentery, and was undoubtedly the cause of the trouble. It was crushed near the base, ligated and removed; the stump was caterized but not inverted. Wound closed with small drain down to stump; this was removed in 36 hours. Patient made an uneventful recovery. On examining the specimen no lumen could be found, so it was divided longitudinally from without; no lumen could be found after division. Specimen had all the appearances of an appendix; enlarged, thickened, fibrous and partly gangrenous. Was it an appendix misplaced or a diverticulim?

Recurrent Sarcoma of Right Lower Extremity.

Case IV. Mrs. L. aged 67. Ten years ago, so the history goes, patient consulted a surgeon concerning a small growth on the inner and under aspect of the arch of the right foot. At that time it was small, painless, but interfered with wearing a shoe and walking. She was advised that the little growth was malignant and that it might be necessary to amputate the foot. This evidently alarmed her so that she did not seek further advice for several years. During this time the growth had increased in size, being now an oval growth, 2 inches long and 1¼ inches in diameter. The same diagnosis and prognosis as before was made. The growth was excised. A diagnosis by the pathologist showed the growth to be a melanosarcoma. The wound repaired itself after some weeks and the patient went a year and a half before I saw the foot again. At this time the growth was about the same size as when first excised. It was again removed and again the wound healed promptly. Prognosis of recurrence was made, but there was no indication of this except at the original site. Two and a half years later, I was called again to see the patient. At this time evidences of recurrence were marked. The growth had recurred at the original site and was about the same size as when first removed. On the inner aspect of the leg 3 inches below the knee, was a growth, somewhat smaller and attached to the deep fascia; and in Scarpa's space there was a large oval growth, 5 inches long, 4 inches wide and 3 inches in thickness resting on the fascia lata; the sartorius muscle was spread out and lost in the growth. The skin over the growth below the knee and in Scarpa's space was normal in appearance.

Operation: The proximal growth was given attention first. Through an incision nine inches long over the most prominent part of the tumor, the skin and subcutaneous tissue was separated freely and retracted; the sartorius muscle was severed proximally and distally, and by blunt dissection, assisted by the scissors, the growth was separated from the fascia, fortunately without injury to the internal saphenous vein. The incision was closed with drainage at both ends. The discharge, mostly serous, was free and the outer dressings were changed twice daily. In three weeks the wound healed completely. The growth below the knee was excised and the wound closed without drainage and healed promptly; the growth in the foot was removed leaving a wound which required packing but which, much reduced in size by deep sutures, healed in a satisfactory manner. The skin over the large growth shows no pathological change at this date (operation, December 15, 1914); but the probability of recurrence and metastasis in abdomen or thorax is great.

Jejunostomy for Extensive Gastric Ulcer.

Russell S. Fowler, M.D.

The following two cases are presented for the purpose of demonstrating what a small amount of surgery can do for what was apparently a hopeless condition.

Case No. 1. This patient has, I think, been previously presented before the Surgical Society a year or two ago.

Mr. J. E., age 43, presented himself for examination July 3rd, 1912, with the following history:

For the past two years he has been unable to retain and digest meat; meat was vomited just as eaten, undigested. Food taken two or three days previously was vomited from time to time. For the past fifteen months there has been pain in the left hypochondrium, gnawing in character, coming on about one-half hour after eating and persisting for two or three hours, relieved by bicarbonate of soda. Until about six weeks ago the patient could retain food except meat fairly well, though vomiting on the average about once a week; recently nothing could be retained, and the pain has become constant and increasing in severity. There has been increasing loss of flesh and strength. In appearance the patient is cachectic. Physical examination showed no divergence from the normal; slightly icteroid appearance of the skin and an enormous tumor in the epigastrium and left hypochondrium, which seemed to be a tumor of the stomach and of the transverse colon. A tentative diagnosis of inoperable carcinoma was made, but the patient was given the benefit of the doubt, and an exploratory laparotomy was made July 4th. A right rectus incision disclosed a large indurated mass involving the entire cardia and adherent to the surrounding structures. The case was thought to be one of inoperable carcinoma and a jejunostomy was performed. The after-treatment consisted in the elevated head and trunk position and nothing by mouth for the first forty-eight hours. The patient was allowed a few ounces of water several times daily, either plain or with a little bicarbonate of soda. Food through the tube was begun at once. A good recovery ensued and the patient was discharged on the thirteenth day much improved.

Up to the first of January, 1913, this patient fed himself for the most part through the tube, though occasionally he would take broth, egg and milk, as well as water by mouth. There was no return of his old symptoms, no indigestion and his health steadily improved. He was able to perform his duties as manager in a factory and felt stronger and better than he had for any time in the two years previous. During all this time the tube remained in situ. On the first of January, 1913, he indulged in a jollification with some friends and the tube was displaced. Finding it impossible to replace it, the patient left it out, whereupon the abdominal opening closed in a few days. Since this time he has taken his ordinary food by mouth and has experienced no ill results. Examination of this patient two months after his operation showed that the tumor had disappeared, the obvious conclusion being that the case was one of extensive ulceration of the stomach, and not carcinoma.

Examination this evening shows this patient to be entirely well. He has had no stomach disturbance of any kind, has pursued his occupation and is not limiting his diet in any way.

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

APRIL, 1916

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, April 18, 1916.

The President, Dr. Ralph H. Pomeroy, in the chair.

There were about 250 present. The meeting was called to order at 8:50 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Joseph Blinder, 8669 Bay 24 St., Univ. & Bell., 1911; proposed by W. L. Wolfson; seconded by L. S. Schwartz.
George Freiman, 703 Grand St., L. I. C. H., 1914; proposed by W. C. Waggoner; seconded by Membership Committee.
S. Ingram Müller, 196 Monitor St., L. I. C. H,. 1914; proposed by E. E. Cornwall, seconded by Membership Committee.

Election of Members.

The following, duly proposed and accepted by the Council, were elected to active membership:

Joseph S. Baldwin, 493 Classon Ave., Cornell, 1913; proposed by R. P. Sullivan; seconded by J. M. Downey.
John B. Byrne, Jr., 224a 6th Ave., L. I. C. H., 1903; proposed by H. M. Mills; seconded by Membership Committee.
Chas. F. Durning, 2101 Voorhies Ave., P. & S., N. Y., 1898; proposed by E. G. Hynes; seconded by S. J. McNamara.
Morton M. Jenssen, Pier 4, Bush Docks, Univ. Christiania, 1898; proposed by H. Bryn; seconded by S. J. McNamara.
Pierre A. Renaud, 48 Prospect Pl., L. I. C. H., 1913; proposed by R. Dunham; seconded by H. K. Bell.
Harry K. Reynolds, 67 Gates Ave., Univ. & Bell., 1910; proposed by E. Bishop; seconded by D. S. MacNaughton.
Maurice L. Wieselthier, 612 Bedford Ave., P. & S., N. Y., 1909; proposed by M. Lederer; seconded by J. H. Isquith.

Applications for Membership.

Applications for membership were received from the following:

Anna C. De la Motte, 70 So. 10th St., Cornell, 1900; proposed by C. E. Scofield; seconded by E. E. Cornwall.
Wm. H. Donnelly, 178 Woodruff Ave., McGill, 1903; proposed by S. J. McNamara; seconded by Membership Committee.
S. Lloyd Fisher, 2911 Clarendon Road, Jefferson, 1907; proposed by S. J. McNamara; proposed by Membership Committee.
Erasmus A. Pond, 1087 Dean St., Bellevue, 1890; proposed by W. H. Steers; seconded by J. R. Taylor.
Wm. D. Scanlan, 196 Prospect Park West, L. I. C. H., 1907; proposed by S. J. McNamara; seconded by Membership Committee.

By Transfer

Sylvester R. Leahy, Kings County Hospital, Yale, 1905, to Richmond Co. Med. Soc.

Scientific Session.

Paper: "The Symptoms and Diagnosis of Gall-Bladder Disease." (Illustrated by Lumiere process lantern slides.)
By Russell S. Fowler, M.D.

Paper: "The Treatment of Hay Fever with Pollen Toxins."
By Alexander C. Howe, M.D.

Address: "Dental Welfare Work of the Metropolitan Life Insurance Company for their Employees."
By Thaddeus P. Hyatt, D.D.S.,
of Manhattan.

Presentation of the "George McNaughton Memorial Library Fund."

Dr. Fowler's paper was discussed by Dr. Charles Eastmond.

Dr. John O. Polak, President of the Board of Trustees, presented the "George McNaughton Memorial Library Fund of $2,500, together with a Book Plate to designate books and magazines purchased from this fund. It was moved and seconded that the Board of Trustees accept these gifts and convey the thanks of the Society to Mrs. Carrie E. Smith and Mrs. Sidney A. Fox, who were responsible for the gifts.

Dr. Kevin reported for the Legislative Committee that several bills affecting the medical profession were being acted upon by the legislature. Among them the Industrial and Regent's Bills.

Meeting adjourned at 11:20 p. m.

Charles E. Scofield,
Secretary.

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GASTRITIS.*

With lantern slide demonstration.

Charles G. Stockton, M.D.,
Buffalo-New York.

THE growth of knowledge is not forward continuously on an ascending plane; it follows rather an undulating course. There are progressions and recessions, gains and losses, fair views and false views. A new conception of one side of truth takes on a momentum in our understanding that carries conviction beyond its just place. Then the sense of proportion suffers and progress is interrupted.

Perhaps all subjects about which we have knowledge in medicine have this fate. Our understanding of these subjects is at best but a changing mental state, sometimes a rather frequent shifting from one ground to another, while slowly progressing. This is strikingly true of the subject of gastritis. Its history is ancient and belief regarding it has been so varied, discussion about it so dull and opinionated that, by common consent, it is now pretty largely left alone. It has come to be one of the most unpopular of subjects for discusion and I flatter myself in having the valor, some may call it the affrontery, to take it up again.

It is interesting to note that following Hippocrates, the ancients regarded familiar gastric symptoms as the result of derangement. Galen used terms meaning slow digestion and absence of digestion (bradypepsia, anapepsia) in explaining symptoms which, in the sixteenth century, found description in the common name, dyspepsia.

The conception of an inflammatory cause of these symptoms appears to have originated with Franz Hoffman, of Halle, and to have been accepted by Boerhaave and the Dutch school in the early eighteenth century; later in the century an anatomical basis was found by the French.

It was Cullen, in 1783, who pointed out that the stomach was subject to inflammation without fever and that, indeed, gastritis explained the symptoms of dyspepsia. In the early nineteenth century, catarrhal gastritis, largely on the authority of Broussais, was looked upon as responsible for the beginning of many other diseases; it was blamed for anemia, phthisis, hysteria, etc. After that time the literature on the subject multiplied rapidly, but no contribution was so convincing, none has stood the test of experience like that of our own Beaumont. From Beaumont's time there was no progress for fifty years. There survived the notion of functional disturbance, the bradypepsia of Galen and the notion of Broussais, that is, an inflammatory basis of the symptoms. Confused ideas were expressed by the English in the term indigestion, by the Germans in the term *status gastricus.*

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* Read before the Medical Society of the County of Kings, Apr. 20, 1915.

Then came the stomach tube and analysis of gastric contents. At once there was re-excited a discussion, very heated for years, dying out gradually without a general concurrence of opinions having been reached.

It cannot be said that there is today any oneness of conclusion as to the source of the very common gastric manifestations that are even yet vaguely ascribed to dyspepsia. There is a dominant tendency to attribute the symptoms to local abdominal irritation, transferred by nerve impulse to the stomach, from the appendix the gall-bladder, duodenum or other parts. The fact that this contention is proved to have a sound basis in fact, as shown by what Moynihan aptly calls living pathology, has had the effect to obscure the equally important truth that the symptoms referred to may and do occur—in fact, in the majority of cases occur—without the exciting cause of appendicitis or other abdominal irritation outside the stomach. Of course, in a proportion of cases the causative factor is to be found in rather remote irritation acting through the autonomic nervous system, irritation seated perhaps in the cranium or pelvis. The symptoms may also originate in metabolic defects, in auto-intoxication, etc., etc.

However, we must account for the presence of a considerable residium of cases in which the symptoms start in the stomach itself, and of these a goodly number depend upon gastritis. To what extent is gastritis the cause of dyspepsia? This question was acutely debated in France from about 1890 to 1910. The discusion was taken up in other parts of Europe and in America. With us the opinion on the matter closely corresponds with that held by the German clinicians. We admit the responsibility of gastritis, but rather underestimate its importance.

The two sides of the discussion as to the usual cause of the status gastricus, or dyspepsia, excluding cases dependent upon states that are now classed as surgical have nowhere been presented so logically as in France, especially the opposing views of Prof. Germain Seé and Hayem. The contention of Germain Seé and his sympathizers approached in character the current German and American view; it was a new statement of the ancient belief in disordered function, yet admitting a minor place to gastritis. The contention of Prof. Hayem, on the other hand, was a re-voicing of the belief of Broussais; it admits of but small importance to functional disturbance *per se*, and bases the cause in inflammation.

Hayem's position does not rest on polemics and theory, but upon the careful study of cases and examination of tissue. To follow his work open-mindedly is to convince oneself of the actual frequency of inflammation of the gastric mucosa. The classification of the types of this gastritis may be over-fine, and for clinical purposes appears to me to be impracticable, nevertheless it is useful to remember that there is an acid gastritis; that is, a grade of inflammation in which the secretion is augmented, and a gastritis in which the secretion of gastric juice is largely or wholly replaced by mucus secretion. Also it is probably valuable to keep in mind the fact that certain cases are especially of a parenchymatous type and others of an interstitial type; however, very often there is a mixed parenchymatous and interstitial involvement. Of chief importance, however, is the realization that gastritis occurs frequently. There should be no hesitation in believing this were we to remember the facts made plain, nearly a century ago, by our countryman, Beaumont. Few men really know what Beaumont described. It is an illustration as to how truths are snowed under. It would be well if his monograph could be republished for there are few indeed who have access to the original book. He demonstrated beyond doubt that the stomach undergoes, and frequently undergoes, inflammatory reaction. He also showed, what is yet more remarkable, that the stomach, perhaps owing to its great vascularity, is almost immediately restored to a normal anatomical state as soon as the cause of trouble is removed. This fact is analogous to the fact that trauma of the stomach is quickly repaired.

I shall recur to the statement which is emphasized that the early disappearance of gastric inflammation takes place when the exciting cause is removed, and also that it persists when the cause remains.

It may well be asked why this difference between able clinicians as to the importance or unimportance, as to the frequency or infrequency of catarrhal gastritis. The reason probably rests in the fact that a correct diagnosis of gastritis is often very difficult. This statement conforms with the view of Riegel and is largely disregarded. Attention was drawn to this by one of your members, Dr. Dudley D. Roberts.

The gastric symptoms produced by irritation of the autonomic nervous systems, in a vagotonic patient or in one sympaticotonic, are almost parallel with those produced by gastritis, and there is a similar parallelism in cases of referred irritation from disease of the appendix, etc. One opposing this view will bring forth the testimony found in examination of the gastric contents; he will point to the statement in text books, in works on diseases of the stomach, to support the view that by the gastric contents gastritis may be at once recognized. This is an error and a curious one. There are cases in which mucus mixed with food, epithelium, pus cells and red blood cells does really emanate from an inflamed gastric lining; but there are many cases of gastritis in which there are no such findings. Also the mucus and cellular elements found in stomach contents often arise from trouble outside the stomach. In many cases only a prolonged study of gastric contents, removed under special conditions, can be said to afford positive indication of gastritis. In not a few cases no reliable proof of inflammation is forthcoming even after this method of study. The absence of mucus in excess, of pus, blood and epithelium in stomach contents, is not proof of the absence of gastritis. The reason for this probably is because the inflammation is localized, often at the *pars pylorica.* In other words, the lower end of the stomach is irritated, this part becomes over-tonic, there is an interruption of peristalsis, a lack of mixing of stomach contents and, as a result, that which is withdrawn does not represent the actual state of the contents in all parts of the stomach. This statement will doubtless be challenged and considered to be hypothetical. Here are the reasons for making the statement:

In a given case showing symptoms of gastric irritation, the stomach contents recovered in the usual manner was negative or inconclusive. Thereupon Einhorn's duodenal tube was introduced, the patient fasting, and secretion excited by giving hot water to drink. Following the method recommended by Bondi, the duodenal content was siphoned out continuously for half an hour or more. With the relaxing of the pylorus, through the effect of the duodenal reflex, there was discharged for a time acid chyme, practically free from bile or pancreatic juice. This acid chyme, however, contained degenerated columnar epithelium, pus cells, red blood cells and flecks of mucus. These pathologic materials came from the stomach, not from the duodenum, bile passages, gall-bladder, or pancreas: this was shown by the fact that as soon as the pylorus closed, as soon as chyme ceased to be discharged through the pylorus, there appeared an immediate change in the quality of the fluid siphoned from the duodenum. Now it became alkaline, bile-colored, contained the various pancreatic ferments in proper proportion and—this is the point—showed not a trace of pus, blood, mucus or epithelium, even when instantly examined, before the ferments had time to destroy the morphology of the cellular elements. In other words the gastric secretions plainly gave evidence of inflammation; the other secretions reaching the duodenum were free from signs of inflammation. Like results have been obtained in the painstaking study of several cases.

In cases of another type the specific gastric ferments and hydrochloric acid are absent; the secreting function of the gastric mucosa has disappeared; in lieu of that secretion, there is mucus, neutral in reaction, but carrying always the characteristics of inflammatory exudate. I have grown to have confidence in the results of this method of examination of the duodenal contents in giving testimony of the presence of gastritis. The method requires some technical skill and a good deal of patient work. I have to thank Dr. Rose Donk for doing most of the work for me. Of the practical importance of doing it, anyone may convince himself. I can no longer dispense with the method. Amongst other things it has convinced me that some of the cases which I had regarded as functional were, in fact, at least to some degree, inflammatory. I am convinced that the inflammation is at times transient, only a temporary accompaniment of a functional state: at other times it is the underlying cause of all the symptoms.

A brief paper precludes the taking up of the various causes of gastritis or the consideration of its several forms and types. Only a few questions of medico-surgical interest can be presented, and phlegmonous gastritis is not included.

First, then, is the rôle of gastritis in peptic ulcer. The inflammatory side of peptic ulcer was demonstrated by Cruveilhier. Its reality, its rôle in producing symptoms and its influence upon the progress and the results of peptic ulcer are yet largely misunderstood and overlooked. In fact, peptic ulcer at once excites a local gastritis, largely a formative, inflammatory process. Hence, the induration, the thickening often extensive, of the gastric walls; hence, the perigastritis, the adhesions, the deformity of the stomach; hence, to a large extent, the pain, gastric irritability, vomiting, over-tonicity and deranged peristalsis.

It is true that, through new tissue formation, the inflammation going with ulcer has a conservative effect. It often converts an otherwise acute perforation into a slow perforation. In accomplishing this there are curious and important consequences. One of these is the making of a diverticulum of the stomach or duodenum, the formation of a cavity, usually small, connecting with the cavity of the stomach; a cavity having walls of inflammatory tissue, very irritable, interfering much with gastric motility, leading at times to biloculation or hour-glass formation and creating a serious situation, the management of which perplexes and taxes the resources of the surgeon.

I have encountered this complication several times within a year. Although the clinical picture has several points common to all cases which I have seen or investigated, nevertheless individual cases have peculiarities and it is usually necessary to resort to radiography to reach a diagnosis. The pain and soreness are more persistent than in simple ulcer. There may be present a palpable tumor having at times extreme tenderness: eating produces distress and often painful vomiting.

Now, as to individual peculiarities, some cases show hyperchlorhydria, others low secretion, or the complete absence of free hydrochloric acid. In one case (Miss L.), that of a woman of sixty, the low secretion, the presence of traces of lactic acid, the presence of blood, the tumor, pain, anorexia and emaciation were strongly suggestive of cancer. A radiogram revealed the real trouble, a diverticulum at the lesser curve, the usual site, associated with hour-glass contraction. The case was unpromising for operation, so duodenal feeding was resorted to. The tube was well tolerated, the symptoms relieved and, as the radiograms show, the diverticulum, but *not* the biloculation disappeared. The latter causes no trouble so long as the patient eats slowly of selected foods. Three months after treatment the patient regards herself as well.

It should be understood that the walls of these diverticuli are of inflammatory tissue; the surrounding lymphatics show the effect of infection, extending more or less widely from the diverticulum. The condition may be one not favorable for operation. It would seem that duodenal feeding is especially indicated and it resulted satisfactorily in the cases in which I employed it.

Hour-glass stomach may arise also from localized perigastritis, secondary to inflammation of the muscular or other tunics of the stomach. The perigastritis may be secondary to cholecystitis or other sources of infection, but usually it arises from slowly-perforating, highly inflammatory peptic ulcer. In one case (Mrs. H.) there was a prolonged history of ulcer, with repeated hemorrhages. For the relief of this the ulcer was excised by Roswell Park fifteen years ago. It was located at the lesser curve, at the juncture of the middle and lower third. At that time there were no adhesions. The patient remained well for two years, but the trouble then recurred. Five times since then I have given her the ulcer cure, each time successfully. In these attacks the element of gastritis has been pronounced. In the autumn of 1914 there were evidences of a peculiar form of obstruction. This was shown to depend upon biloculation, the isthmus being located at about the middle of the stomach. For this she was operated. The cause of the hour-glass contraction was found to be inflammatory bands, deep, strong, extensive, but sparing the pylorus. These were carefully dealt with and the contraction was overcome. Four months later, as the radiograms show, the biloculation had returned, although the patient is without symptoms.

Hour-glass contraction is recognized more often than formerly;

it is not a rare complication; it is essentially a direct result of inflammation of the walls of the stomach, including the serous coat. This inflammation is almost always a consequence of peptic ulcer. Some cases should be treated by gastro-gastrostomy, others by gastroenterostomy and others by attacking the constructing adhesions. The majority of my cases have been made comfortable without operation. In three I have had good results from duodenal feeding, although in one this should be called lower pouch feeding, for I was unable to get the end of the tube beyond the pylorus. Nevertheless, by keeping the upper pouch at rest, the irritation was prevented, the inflammation subsided and the patient considers herself to be very well three months after the use of this method of feeding.

Those cases of ulcer in which inflammation stands out as a large feature are not infrequently mistaken for carcinoma or for "ulcer-cancer." Some of these cases disguise their nature by assuming all the cardinal signs and symptoms of cancer fairly well advanced. I have seen cases which upon exploration were regarded as inoperable cancer, turning out to be inflammatory tumors, terminating in recovery, save with continuance of motor disturbance. Such surprises are not very infrequent, of course, in old syphilitics; but even in the absence of lues, when the trouble is only one of chronic inflammation superimposed on chronic ulcer, they are not rare.

There is another class of inflammatory cases, also having especial interest for surgeons, which is much less common. I refer to chronic indurative gastritis, sometimes called cirrhosis of the stomach, sometimes *linitis gastrica.* The precise nature of the disease is not well understood and, indeed, cases vary in morphology.

In some cases, the presence in the masses of connective tissue of proliferating epithelial elements justifies the suspicion, if not the conclusion, that the process is malignant. In others the histologic evidence of malignancy is not discoverable: there is merely replacement of the normal tissue by fibrous tissue, precisely as in scar formation. It begins apparently in the mucosa and invades all the tunics. It may be localized or diffused throughout the stomach; in the latter case leading to contraction of the organ until it occupies but a fraction of its previous space, making a very small and very hard stomach, to be palpated when below the costal arch, as a rounded small tumor. It is usually movable, and, upon deep pressure, tender. The patient can take but little food at a time and the little often is vomited. Emaciation, therefore, develops and at times the patient appears cachetic. I have one patient, now in fair health, who, three years ago, had a condition which convinced a number of good judges that he was about to die of carcinoma of the stomach. On lavage enormous quantities of mucus were removed, there was persistent bleeding in small amount, there was no trace of gastric secretion, but lactic acid was constantly present. The man was considered to be inoperable, yet after long-continued lavage with ichthyol solution and other local and general measures of treatment, he so far recovered that for two years he has successfully worked at his trade as a barber. The stomach appears now to be larger than it was at one time, and, by means of frequent meals, the man has succeeded in gaining twenty pounds in weight. He is not well; occasionally he needs to have treatment, but his life has been spared.

When this disease is local, it attacks, according to my observations, the lower end of the stomach the remainder of the organ escaping. At times the pylorus is alone affected. I am not aware that there is any real relation between this condition and the pyloric stenosis of infants.

The disease, when it attacks the pylorus, was described by Boas as stenosing gastritis. At times the indurative process extends upwards and involves more and more of the stomach in this chronic indurative inflammation. Of course, this results in the formation of a palpable, movable tumor, usually, because of the symptoms, mistakenly classed as cancer of the pylorus.

It is surprising to note the improvement which sometimes follows a very simple course of treatment, provided it is carried out long enough. In a proportion of cases resection or gastro-enterostomy is called for. Gastro-enterostomy is also at times demanded in the cases of more advanced diffuse induration, the type commonly called *linitis gastrica.* I have now under observation, through the courtesy of my associate, Dr. Eschelman, a case operated on, I believe, at New York Hospital, in which the diagnosis is said to have been made by Dr. Alexander Johnson. As the radiogram shows, there remains but a pitiful little ball of a stomach. As a result of a gastro-enterostomy, the patient survives and, by great care in eating, is able to work and support his family.

The so-called polypoid gastritis may be joined to these cases of gastric cirrhosis (*linitis*), or the process may be limited, or almost limited, to the mucosa. The polyps sometimes act obstructively at the pylorus, or, growing from the lower end of the esophagus, where columnar epithelium is found, the polyp may interfere with deglutition. I have a radiographic plate from an interesting specimen at the Museum of the University of Buffalo.*

Gastritis is commonly associated with syphilis of the stomach, an expression of lues far from infrequent. When the spirochetes invade the tissues of the stomach, the mucosa may be involved more or less extensively in inflammation. There is doubtless a mixed infection, but to what degree and with what effect is not precisely known. We know that the gastritis disappears after anti-syphilitic treatment is thoroughly practised. There is also found a zone of inflammatory tissue surrounding gummata of the stomach: here the process is luetic; mixed infection does not appear to be included. Another and very interesting form of gastric syphilis, with indurative gastritis, involves all the tunics of the organ and is accompanied by endarteritis. This process deforms the organ in various ways. Pyloric stenosis may result from induration; there may be widespread induration, with extensive adhesions from perigastritis. These cases sometimes resemble *linitis gastrica* and again are mistaken for carcinoma I have a radiogram illustrating such a case. The bismuth meal passes almost immediately through the stomach; the cavity of the stomach is very small; the pylorus remained patulous; the duodenum is much dilated. Upon opening the abdomen a large mass was found, considered to be carcinoma and inoperable. The abdomen was closed without attempting more. A "three-plus" Wassermann was found and neo-salvarsan used intravenously. Immediately the symptoms disappeared and the patient is considered as cured. I do not know the present radiographic appearance of this stomach.

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* Stockton's Diseases of the Stomach, p. 576, D. Appleton & Co.

(Dr. Stockton's further remarks, being largely explanatory of the pictures, are omitted as the illustrations have not been reproduced.—Ed.)

INTERMENSTRUAL PAIN.

Report of Two Cases.

Thurston Scott Welton, M.D.,
Brooklyn-New York.

A SEARCH through the literature shows a scarcity of articles bearing on the subject of Intermenstrual Pain. Howard Kelly, in the 1913 edition of his Medical Gynecology, has presented for our attention a most thorough review of this topic. As, so far as I can discover, nothing new has been added since then, it would be a presumption on my part to attempt to offer more than a short outline of the salient points.

What is Intermenstrual Pain? It is a form of suffering peculiar to the female sex. The suffering is characterized by pelvic pain occurring on a fixed date between two menstrual periods.

The Germans call it by the inaccurate title of "Mittelschmerz," a faulty nomenclature inasmuch as the pain does not occur, as a constant factor, in the middle of the menstrual cycle.

It has been referred to as an "intermediate dysmenorrhea." As the pain occurs between the menstrual dates and not at the time of the catamenia this is also a faulty nomenclature.

The French term, "douleurs intermenstruelles," like its English equivalent, is the best and most accurate for our use.

History.—As far as we know it was first described by Sir William Priestly in 1872. In his first paper on this subject he reported four cases, selected, he says, from a "number of others."

Since 1872 articles on intermenstrual pain and case reports have been printed from time to time. Kelly does not believe the condition is as rare as has been supposed. However, to date, but sixty-four cases have been reported and Kelly, on the lookout for this type of affliction, has included fourteen of his own cases to this number.

Age.—In Kelly's report, age was noted in forty-one out of the sixty-four cases. In three, the intermenstrual pain began with the first menstruation. In the others, menstruation had been established years before this peculiar type of suffering began. In ten cases (including the three when it began with the first appearance of the menses), the pain began when the patient was under twenty years of age. Of the remaining cases, twenty-nine were between twenty and thirty-five years. Two were over thirty-five. One of these was forty-eight years old.

From this we learn nothing except that intermenstrual pain is an affection belonging to the period of full sexual activity.

Sterility and Child-bearing.—To say the least, the case reports we have leave us nowhere after considering these items in the history, for of the sixty-four cases, thirty-two were sterile, thirteen relatively sterile, fourteen fertile, and five unknown. Kelly sums this up by stating "that these results seem to support the statement made by some persons that intermenstrual pain is associated, in the majority of cases, with sterility." Of the fourteen cases of pregnancy five had the pain after the birth of the last child. With three it began with a miscarriage. Of this Kelly says, "It would seem, therefore, that it is at any rate possible that child-bearing is, in some cases, an exciting cause."

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* Read at the December meeting of the Brooklyn Medical Society.

Date of Pain.—The data on this point is not as full as could be wished. From what case reports we have (in which the date of the pain was recorded), we may conclude that the intermenstrual pain occurs always about the middle of the month and extends into the second half of it.

Character of Pain.—No special type of pain is present. In some it was dull; in others it was sharp; in a few cases it was paroxysmal.

Duration of Pain.—Varies from a few days up to the whole time between the occurrence of the pain and the beginning of the next menstrual period. In the majority of the cases it lasted three to four days.

Period of time which the condition may last.—This varies. In one case it had existed only a few months when the patient came under observation. In another it had lasted twenty-two years. Sorel reported a case in which it began with the first menstruation and ceased only with the menopause. In no case was it self limited.

Presence and nature of discharge.—In thirty-nine of the sixty-four cases a discharge was present. It is thought that the discharge has no bearing on the condition but is associated with accompanying lesions.

Menstruation.—Intermenstrual pain is in no way associated with dysmenorrhea. In twenty-seven cases, menstruation was noted as painful. In twenty-three it was painless. In fifteen, the flow was profuse. In four, the flow was scanty.

Location of the pain.—In the majority of the cases, the pain was situated in one or the other ovarian regions. In two cases, it was in both ovarian regions at the same time. In five, it was in the right and left side alternately.

Relation between the pain and lesions found in examination.—The lesions observed in the reported cases were indefinite in character. In a good many nothing which could be called a lesion was present. Sometimes when a lesion did exist there was a relation between it and the pain and sometimes none whatever. Some of the lesions reported are: thickening of an ovary, hematoma of ovary, hydrosalpinx, salpingitis, tenderness, with or without swelling, in the broad ligament on the side corresponding to the pain, salpingo-ovaritis, displacements of the uterus, and uterine fibroids. "These results would seem to indicate that intermenstrual pain is not necessarily related to any one location, but rather that the location is determined by the coexisting abnormal conditions."

Treatment and Results.—So far discouraging. Dilatation and curettage in eleven cases. No benefit except in one case where the uterus was steamed out after it. In this case the pain has lasted but a few months.

Ovarian, parotid, and thyroid extracts were given in one case without relief. In another the thyroid extract alone was followed by complete recovery.

Electricity over the ovaries tried in four cases. Two somewhat improved. Two no benefit derived.

Removal of ovary and tube was tried in four cases. In one the pain was absent for eight years. In another the pain had been absent six years. (1913.) The other two cases unbenefited.

Removal of appendages on both sides in five cases, in two of which an ovary had been removed without benefit. Results were good except in one case. As the case which was not relieved menstruated after the operation it is supposed some ovarian tissue was left.

Suspension of uterus in three cases. Complete relief in one, partial relief in another, the third one not bettered at all.

From a course of baths partial relief was obtained in three cases.

Rest in bed with a straightening of the uterus during the attacks of pain (in acute anteflexions) gave partial relief. Same is true of the use of a Hodge pessary for extreme anteflexion, together with the relief of the coexisting endometritis. The use of an intra-uterine pessary in a case of acute anteflexion gave complete relief.

Complete relief from 2 to 6 months was obtained in two cases treated for endometritis (nature of treatment not stated); in one case from the cure of an eroded cervix; and in one from rest in bed during the attacks, with support of the uterus by tampons.

Theories of Etiology.—Kelly agrees with Priestly that intermenstrual pain is definitely associated with the physiological changes in the ovary which result and end in ovulation. This view makes it dependent upon the menstrual period which follows, rather than upon that which precedes it.

Some claim it is purely a nervous manifestation.

The fact that the absence of ovulation during pregnancy and lactation is accompanied by a cessation of the pain, supports the theory that the ovaries are directly concerned with it.

It has been suggested that the pain is associated with fibroid growths. Of the sixty-four cases reported, six had fibroids.

Croom agrees with Priestly in associating intermenstrual pain with ovulation, but whereas Priestly conects it with the process of preparation for approaching ovulation accompanied by menstruation, Croom believes that ovulation takes place at the time of the intermenstrual pain, independent of menstruation.

Thus far, the writer has played the part of a plagarist and has, in the main, used the phrases from Kelly's pen.

It has been suggested that sexual irregularities are an etiological factor in this condition. Women who do not have sexual intercourse, or having it do not derive satisfaction from the act, or have it too often, or not often enough, it has been advanced, are liable to all kinds of pelvic pathology, and resultant intermenstrual pain. This is a field but recently entered in a scientific manner. Many new writers have sprung up like weeds in the night, some claiming much, others little for the part sexual activity plays in the life of the female. It is not easy to get a frank history on this subject and so little data is available to date we must not, at present, consider this topic in the etiology of this rare condition. That it is possible for it to play a major role in intermenstrual pain is admitted.

It is my good fortune to be able to report the following two cases of true intermenstrual pain.

Case i.—Mrs. D. Thirty-three years. Born and lives in Buffalo, N. Y. Housework.

Family history negative.

Typhoid at thirteen years.

No operations.

Married sixteen years. One pregnancy. Full term. Instrumental delivery. Male child now fourteen years old. No other pregnancies.

Began to menstruate at thirteen years. Regular, twenty-eight-day type, duration four days. Menstruation accompanied by co-menstrual pain first day with, also, "sickness to stomach." After birth of son, the co-menstrual pain ceased. This type of menstruation was constant until five years ago when she began to get stout. Her usual weight was about 160 to 170 pounds. When I first saw her she weighed 290 pounds. The weight was distributed, for the most part, about the lower abdomen, buttocks, and thighs. After she became excessively stout, her menstruation lasted two days. She suffered from occipital headaches two days before the flow.

For last three years has suffered from left-sided pelvic pain. This pain was not constant. It was more severe at the menstrual dates and after standing any length of time. (No doubt, a varicose condition of the broad ligament.)

The intermenstrual pain began two years ago.

The intermenstrual pain began eight days before the next expected menstrual period. The pains covered two days. She had from three to five attacks in twenty-four hours. Each attack lasted from ten to fifteen minutes. The pains resembled the co-menstrual pain she suffered before her son was born.

She has never had leucorrhea.

A peculiarity was that one month the intermenstrual pain was situated on one side of the lower abdomen and the following month on the other side. The alternation of the pain each month was constant.

Varicose veins of legs present.

Perineum lacerated, 2d degree.

Cervix enlarged, pointed forward, and presented a bilateral tear.

Due to the fat on the abdomen a bi-manual examination was not satisfactory. Deep abdominal pressure elicited tenderness over the tubes and ovaries.

She was willing to have the cervix and perineum repaired but would not agree to any abdominal work, by any route. Entreaty proved useless.

Operation. August 25th, 1915. Iodinized cavity of uterus. Did a low amputation of cervix. Repaired perineum after method of Wade.

Uneventful recovery. She left hospital eleven days after operation.

Since operation has been on a restricted diet. She takes daily exercise. Has been taking corpus luteum and thyroid extract.

I have not seen her since she left the hospital. She has written me that the intermenstrual pain has ceased. Her left side still bothers her.

Will the intermenstrual pain begin again? The time since her operation has been too short to offer an opinion. I doubt if the operative work did much to help her condition. The moral effect may have been good. I believe the corpus luteum and the thyroid extract, one or the other, or both, to date has been responsible for her improvement.

CASE 2.—Miss H., thirty-seven years. Born U. S. A. Teacher in Eastern College.

Family history negative.

Previous history uninteresting except that she was operated upon for appendicitis ten years ago in Chicago.

Never married. No pregnancies.

Began to menstruate at fifteen years. Regular, twenty-eight-day day type. Duration four days. Moderate. At first had little if any pre-, or co-menstrual pain. Of late has experienced co-menstrual pain, not severe in character, seven or eight hours after the flow was established. When this pain began the flow stopped. Pains would continue an hour or two, the flow would begin again and the pain would stop.

When she was just past twenty-nine years of age the intermenstrual pain began. Up to time of operation it was constant each month. The intermenstrual pain began ten to twelve days before the next expected period. The pain was accompanied by a simple leucorrheal discharge.

At first, the duration of the pain lasted over a period of twenty-four hours. For the past six years it lasted over a period of from three to four days. She suffered one to three attacks every twenty-four hours. The pains were severe and to use her expression, "just knocks me out."

The pain has not been located in the same part of the pelvis. At first, it was on the left side corresponding to McBurney's point on the right side of the abdomen. Gradually the pain became located over the left ovary. The pain changed in character. At first it was diffused. Then it felt as "though a sharp instrument had been inserted." As the intermenstrual pain prevented her from doing her best work, and the loss of several days each month having an economic value, she sought relief. At first she consulted two Brooklyn men. Finding nothing physically wrong, they put the burden of the blame on the intestinal tract and gave her medicine, had her take enemas, lacto bacilline, etc. She continued this treatment for six months. In the winter of 1912, a Boston man made a diagnosis of an ovarian cyst and recommended operation. Two weeks later, wishing to confirm the diagnosis, she consulted a New York man. He said he could find no cyst and advised her to try to forget the pain. An Osteopath was next consulted in Boston. He gave her a course of treatments for a congested left ovary. The treatments were ineffectual. After a lapse of two years, the pains having increased in severity, she consulted the New York man again. He diagnosed a fibroid condition of the uterus.

I saw her for the first time during an attack of the pain. Having listened to her story and knowing she was above the average in intelligence, and, also, aware of the fact that different men had made different diagnoses, I examined her under anaesthesia and found the following:

Anteflexed, infantile uterus. In right fornu of uterus a fibroid growth about the size of the uterus. Left ovary enlarged. Dr. H. A. Wade also examined her at the time. We made a diagnosis of fibroid tumor of uterus and cystic left ovary. She was given her choice of a myomectomy and resection, or removal of the diseased ovary, or of a hysterectomy, plus work on the ovary. She left the matter to the operator.

I operated August 5th, 1915.

Pre-operative diagnosis confirmed. Left ovary and tube removed. Uterus removed according to the technique of Krönig. She made an uneventful recovery and left the hospital nine days later.

Writing on December 14th, 1915, she reported that she has had no return of the trouble. She says she feels "tip-top." She writes:

"In last three weeks have reached normal weight, sleep and eat well, and feel generally better than in the last ten years. Able to do college work now that was fatiguing two months ago."

(Since reading this paper I saw Miss H, January 3d, 1916. She says she is, physically, another woman.)

Had we contented ourselves with a myomectomy or left the uterus alone and simply removed the cystic ovary, would the intermenstrual pain have ceased? Did the fibroid have any direct bearing on the condition? This is still a problem for us to master, and only by a large number of case reports carefully studied, will we be able to arrive at the answer.

VACCINES, THEIR USES AND ABUSES AS DETERMINED BY THE PRINCIPLES OF INFECTION AND IMMUNITY.

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Principles Governing Infection.

THE processes of natural selection, as they operate in nature at large, also govern the relationship between the units of our body, the cells, and their enemies, those germs which frequent the same or contiguous habitats. No organism that cannot live under the conditions presented within our bodies can become a parasite therein. For instance the food (the blood) presented to our body cells or some of the cells themselves or a combination of the two must be material upon which a prospective invader can feed, and the temperature and the oxygen supply must be such as will permit the operation of what may be called the germ's engines of digestion. The next essential is for the germ to get by the physical barriers (such as the epithelium). Finally, just as the germs may feed upon the cells of the body, the cells of the body may feed upon the germs, and unless the germs are protected either physically (as by capsules) or chemically (as by the diffusion of germ produced materials either poisonous to the body cells or inhibitors of their enzymes) any attempted invasion fails.

Such are broadly the principles governing all possible infections and upon them is based all reasoning concerning the therapeutic use of vaccines. The body cells and the infectious agents, their enemies, have undoubtedly grown up together in the world's life, man and his present parasites having probably kept house together ever since the time of Adam (to borrow a convenient though most indefinite phrase from the laiety). And, as bacterial and other parasitic bodies are constructed of materials similar to or identical with those composing the body cells and are constructed in a similar way, it is easily understood how neither one, the bacterium nor the body cell, is all powerful with respect to the other. Neither can destroy the other at one fell stroke, as could be effected by intense heat, but each and every result is brought about by the slow processes of digestion. For instance if a leucocyte engulfs a tubercle bacillus an interaction always results to which either or both combatants may succumb.

A true septicaemia in which the invading organisms grow in the blood plasma is rare, for even in such a disease as malaria the hemamebae develop within the protection of the red cells and are never more than passengers in the plasma, some even claiming that for a spore-parasite to pass from one red cell to another the two cells must be in contact. In typhoid most of the bacilli are always found in the intestine and lymphatic glands, although as passengers bacilli may usually be found in the blood stream. Similar conditions maintain in micrococcal infections. Even in syphilis, the treponema has not been seen in the blood, so far as I am aware. However, certain tropical diseases, as trypanosome infection and, perhaps, relapsing fever—where during the febrile period the organisms are found free in the plasma—are exceptions.

These facts are mentioned to show how inimical blood plasma is, in its undiluted state, to parasites generally. It should be remembered, here, that this plasma is the combined product of every cell in the body. Thus most of our infections are local, although the locations involved may be extensive as in pneumonia, or in puerperal fever, or in typhoid, or multiple as in multiple abscesses, or even in syphilis in which, of course, so many tissues are involved is to make it practically a general infection.

It is natural that the blood plasma should have become the great reservoir of ready formed anti-bacterial materials since its make up has been contributed by every cell in the body, and it will, therefore, contain the anti-bacterial materials of every kind of cell. It should be stated here that all the anti-bacterial substances produced by any cell can only be products or modifications of products formed by that cell for its usual normal function. And, since each infectious agent is known to have selective action upon particular groups of cells, and as such cells have totally different functions, as for instance nerve cells or liver cells, the inference is compulsory that the cell groups react differently and that substances so produced find their way into the stream of plasma that washes all.

As might be inferred from what has been said about the balance between cell parasites and cell hosts, immunity or resistance to infection is always variable and relative. One man might today resist a dose of typhoid bacilli which a week later would produce the disease. Eight to eleven tubercle bacilli have been experimentally found to constitute the minimum dose that intravenously administered will produce tuberculosis in a guinea pig. So the time and tide that old Solomon recognized as affecting his intrigues is equally operative between the cells of our body and the germs with which they so frequently rub elbows.

With the foregoing in mind, one may understand how, in local infections, it is most important to the germ to be planted in as large numbers as possible and to be so placed as to be reached by only a diluted plasma. Such conditions everyone knows to be presented by an injury which forces much infectious material into the tissues and which, at the same time, through mechanical means, cuts off the plasma supply, besides reducing or destroying entirely any defensive or offensive power possessed by the cells of the area involved. Any one of these effects—amount of infectious material introduced, interference with blood supply, injury of cells—may be sufficiently marked to compensate for a minor extent of the others.

It is in just this way that all secondary infections arise: for instance, the inflammations that so frequently accompany or follow tuberculosis of the lungs, measles, scarlet fever, gonorrhoea, etc., the determining injury being caused by the primary infection.

Having considered some of the more obvious cases of cause and effect first, we may turn to primary local infections such as diphtheria, mumps, influenza, pneumococcus and other "colds," gonorrhoea, typhoid, tuberculosis, etc., and attempt to explain their development in like fashion, and, as the object is only to convince of the way in which infections operate by showing the universal applicability of the principles, what is hardly more than a suggestion is given. Generally it must be recognized that the every day phenomena of life involve slight abnormalities in the conditions of most tissues: a temporarily poor or perverted blood supply either generally or locality, as from exhaustion, indigestion, much chilling of the surface, etc., the clogging of a tiny gland, or even the normal death of a single cell may furnish the weak point where a wandering germ, by having the natural balance—previously alluded to—turned in his favor, may find favorable conditions for growth.

We all know that the survival of the fittest refers to those so constituted as to be able to grow and multiply most under the conditions present, and when an organism has proven the suitability for such purposes of the conditions of a human body, by producing disease thereof, we can understand that a direct transplant to another person would be the process most apt to succeed in reproducing the malady. This same reasoning applies to local infections; for instance Rosenow and others have proved that streptococci from joint infections, intravenously inoculated, tended to produce only joint infections and we know in the laboratory how easily bacteria lose their virulance upon culture media, which is nothing more than a tendency to maintain variations which suit the condition last met with.

Principles Governing Cure.

Such being the way in which infections develop, let us turn to the way in which they are cured: The plasma, while in the body, as we have noted, nor yet when withdrawn and in the form of *undiluted* blood serum, is by no means a good culture medium for pathogenic micro-organisms; in fact there are few that will grow in it, so that we can understand how nothing beyond a slight hyperemia of a part might be sufficient to check or destroy any invading micro-organisms. Should they, however, continue to grow, the digestive and solvent powers of the plasma take up specific materials from the bacteria (partially digested bacterial substance for instance) and carry them throughout the circulation. While circulating in the blood, such substances must meet with the very cells which were the makers of those plasma contained substances which tended to digest (dissolve) the bacteria but which we have supposed were not strong enough to complete the job. The natural result is, of course, to stimulate such cells to produce more of the enzymes (just as particular foods are known to stimulate particular glands in our digestive tract). The additional quantity of enzymes turned out passes into the plasma and in it passes through the inflamed area and, of course, intensifies the digestive action exerted upon the infecting organisms.

If the organisms are still able to maintain their headway, the stimulation of the cells producing the required enzymes is increased, just as before, and this goes ahead, at least until the cells' physiological limit is reached. Everyone should bear these considerations in mind when pushing the dose of a vaccine.

In this connection we should be particularly interested in wondering what occurs in typhoid fever cases that pass almost to *extremis*, and then rally and recover. Is it that the result is due to a production of special anti-typhoid enzymes that reaches a maximum when all the other body powers have steadily declined to a very low ebb?

If this is true, such individuals are striking examples of the need for biological preparedness and were sadly in need of a tonic, not Teutonic as Europe is now getting, however much cultured or cultivated a typhoid vaccine may be! Perhaps, in such cases an accumulation of bacterial poisons may occur to an extent sufficient to interfere with the continued growth of the bacteria producing them. In culture media such effects are very noticeable and have been employed to identify species of micrococci by attempting to grow the organism under examination upon media from which a growth of a known organism has been removed. If the new plant should fail to grow the indication would be that it was identical or nearly related to the first.

As to what groups of cells usually respond, or may eventually respond, to the call for substances to digest the invading organisms, little is known beyond the fact that the cells of the lymphatic system, including the leucocytes, are the chief agents. However, it is presumable that all body cells have some ability of this order, probably in the degree with which they resemble the embryonal vegetative cells, and therefore in the proportion in which they can shift for themselves and multiply.

In normal intestinal digestion the leucocytes take a prominent part, and are known to carry a large part of the fat absorbed. If particles of carmine or of India ink be put in the intestines, animal experimentation has proved that large numbers are taken up in the intestinal walls by leucocytes, that are known to accumulate there in large numbers, particularly during active digestion. Thus we find that one of the normal functions of the leucocytes is to pick up insoluble materials, and this is confirmed by what has been observed in certain infections where the invading bacteria are the solid particles found within the leucocytes. That all infections do not cause an increase in the number of these cells found within the blood stream may indicate that they are unable to pick up all organisms, or at least that nothing about the germ had an irritant effect upon the leucocyte, for if it did, the stimulation of the leucocyte-mother cells would be inevitable and leucocytosis would ensue. Any increased production of leucocytes could not be masked by increased destruction, since the inevitable fluctuations in the counts and evidence of the greater death rate among these cells would be very noticeable. We will not consider further the possibilities of leucocyte action in infection, except to emphasize that all the phenomena of infection and inflammation show the great importance of these cells. Further, as particularly interesting from the standpoint of vaccine therapy, it should be stated that in all infections in which a leucocyte increase is usual, an administration of a vaccine that benefits is always accompanied by a progressive leucocytosis.

From what we know of diphtheria and of tetanus, and of the results of the use of the antitoxins prepared to treat these diseases, we deduce that an individual may be immune to the poisons produced by invading bacteria, apart from his power to destroy by digestion the germs themselves. To a certain degree, however, this difference must be relative, as a germ's skin is also his stomach and toxins cast out must serve to prepare the host's substance for the germ's needs. This is recognized in practice when an exposed child is immunized with diphtheria antitoxin; such passive immunity as is conferred is supposed to last only about two weeks and undoubtedly prevents the growth of diphtheria bacilli in the given case. The immunizing dose of antitoxin may be supposed to act as a therapeutic muzzle upon a germ, destroying it by preventing it from eating. While nothing definite is known as to what cells in the animal produce antitoxin it seems reasonable to suppose that it is a contribution from every cell susceptible to the toxin and that it is nothing more than a great overproduction of substances normally produced. With this view it is conceivable that in damaging a cell, the toxin acts by combining within the cell with substances produced by the cell for normal physiologic activity, and that these substances are identical with those forming antitoxin. In this case antitoxin, of course, results from the stimulation (mild and gradually increased irritation) of the susceptible cells by the toxins till the greatly increased formation of such substances overflows into, and accumulates in, the plasma.

Reasons for Employing a Vaccine.

An excellent illustration of conditions affecting the use of a vaccine in treatment may be given by recalling the relation between the cerebro-spinal fluid and the blood plasma. The former fluid, like all body fluids, is, of course, derived from the plasma but in content of anti-bacterial substances it has been found to be always much behind the plasma. For the purposes of the illustration let us suppose that the cerebro-spinal fluid contains such substances in one quarter the concentration of that in the plasma. Understanding the contents of the two fluids to rise and fall proportionately, it would be necessary to multiply four-fold the normal content of the plasma before we could, by vaccine treatment, raise the strength of the cerebro-spinal fluid in these substances to equal that of the blood at the time of commencing the treatment. This, of course, could be easily done, provided we could depend upon the usual interchange between the two fluids. Should, however, the abnormal conditions accompanying an infection of the cerebro-spinal system obstruct this interchange our calculations would be upset in proportion. Furthermore, we can understand how in the case of an infectious process in a place, as the cerebro-spinal canal, not in free communication with the plasma, bacterial substances would not have free opportunity to reach the plasma and through it the various cell groups that might assist in the production of anti-bacterial substances.

Just such conditions exist wherever an infectious process is; in fact their existence, in some degree at least, prior to the beginning of the process, may often be taken for granted as explaining its development.

We thus have developed a reason for the use of a vaccine: The existence of an infectious process in which bacterial products are not reaching the blood in amount sufficient to either stimulate the formation of enough anti-bacterial substances to effect a cure or, if the limit be necessary, to the maximum production of these substances of which the particular individual is capable.

Some Conditions in Which Vaccine Therapy May Reasonably Be Employed.

In vaccine therapy one principle stands out very prominently, in fact it is the leading one, in view of that basic principle of practice requiring one to be at least sure he is doing no harm.

This is it:

If there is reason to believe that all the susceptible cells of the patient are being stimulated by substances arising from the infecting agents, do not give a vaccine, for there is hardly a chance but that it will tend to swamp, by over-stimulation, the normal reaction of the cells upon whose response cure depends.

The reason that greater harm is not often done by indiscriminate vaccine therapy is the common use of stock vaccines in minute doses, and the fact that most patients can stand lots more bad treatment than we think.

When is there reason to believe that all of a patient's susceptible cells are being stimulated to produce anti-bacterial substances? When the general constitutional symptoms of infectious disease are present: fever, rapid pulse, prostration, etc. Well developed lung tuberculosis is an excellent condition in which to study the possible ill effects of injudicious vaccine medication. With it a patient is often so nicely balanced between improvement and decline as to respond most noticeably to beneficial or injurious influences; and the same is true of his lungs.

After a dose of tuberculin, what occurs in a tuberculous lung probably varies as follows:

If the disease process is early and the bacilli not accompanied by an accumulation of tubercular materials, the reaction in no wise differs from that which would occur in like circumstances with any other infection. Accordingly the increase in the digestive power of the blood over the bacilli causes the disintegration of some or all, and this digestive process is either so complete as to leave no irritating products to harm the neighboring tissue cells or else such products are not formed in sufficient amounts to do serious harm.

However, when the tubercular process is more advanced and its products are accumulated in greater amount, any sudden increase in the specific digestive power of the blood looses such an amount of disintegration products that the tissue cells in the immediate neighborhood are swamped and many are digested by the tubercular products, just as tubercle bacilli may be by the blood serum. Thus it is that tuberculin often produces breaking down of tuberculous lung tissue and is therefore usually contraindicated in advanced disease, certainly in all cases, early or late, of the disease while showing fever.

Surgical tuberculosis, after any existing abscess has been drained, is, however, most suitable for the treatment and very striking results have been obtained by its use.

It seems strange that vaccine treatment of gonorrhoea is not more frequent. Even during the acute stage, *if there be no constitutional symptoms,* as fever, it is possible that great good might be accomplished. However, when the acute manifestations of the disease have subsided there can be no question but that the total eradication of the organisms can be best accomplished through the use of vaccine. An autogenous vaccine may be easily made by taking a plant during the acute stage, when organisms are plentiful, and to be obtained in pure culture with little difficulty. If distinct varieties (or strains) of gonococci exist, as is claimed, it may be of great importance to have the vaccine autogenous.

The suitability of gonorrhoea for vaccine therapy is also indicated by the usual lateness in the disease of the appearance of the blood reaction sufficient to give a positive complement fixation test.

In a case suspected to be one of chronic gonorrhoea, the use of a vaccine could give great assistance in the diagnosis, as in a positive case a focal reaction, increased discharge, etc., would certainly follow the first one or two injections. Of course, a local (at the point of injection) and even a constitutional reaction might accompany it.

The principles furnish such strong contraindications to the employment of vaccines in the treatment of pneumonia and of typhoid that something more than the mortality tables and personal impressions quoted by some who have tried them is required to justify their use. The same is true of all infectious processes with continued constitutional symptoms, especially fever.

An ideal condition for vaccine treatment is presented by chronic articular rheumatism. Here the infectious agent, the streptococcus, is present in small numbers in areas only reached by a much diluted plasma. Before proceeding with a course of vaccine treatment in such a case it is, of course, desirable to remove, if possible, any existing probable primary focus of the infection, such as suppurating teeth, or a chronically inflamed gall bladder or appendix. If this be not done the supply of bacteria within such entrenchments, and there usually safe from the effects of a course of vaccine treatment which may completely cure the rheumatic symptoms, will be very apt to cause relapses. For, just so soon as the specific power of the blood has fallen from the point to which it was raised by the vaccine, some of the bacterial colonists, that must frequently escape from such foci, will reseed the susceptible joint tissue and the disease will return. In some cases of chronic rheumatism it seems that the gastro-intestinal tract in general is the focus from which the joints are invaded, and therefore, in all cases treated, it behooves one to see that it is working normally—anyone who is particularly interested in the subject of the vaccine treatment of rheumatism will find considerable in recent literature on the subject.

Another common chronic infectious process that is very suitable for vaccine treatment is acne, and, if one use an autogenous vaccine made of the organisms that appear in great numbers in smears from pustules in all cases this will usually consist of micrococci, and not of the so-called acne bacilli. With ordinary precautions to see that a patient's general condition is good, vaccine will usually effect a cure of these cases in a few weeks. Some are undoubtedly very intractable, however, and, although great improvement may always be got, complete cure seems impossible. Often, upon investigation, it will be found that the intractable cases have a carbohydrate intolerance as evidenced by occasional appearance of sugar in the urine or at least an abnormally high percentage of sugar in the blood. Furthermore, severe relapses may often be traced to an increased consumption of sugar, as in candy or in grapes.

Furunculosis is an allied condition which is also most suitable for vaccine therapy, but it, even more than acne, is frequently much influenced by sugar intolerance.

In chronic infections of the nose, ear, or bladder, before thinking of vaccine therapy one must always determine whether there is not some predisposing condition requiring surgical treatment. An antrum of Highmore full of pus, a badly drained suppurating ear, a bladder with stone, are certainly not to receive vaccine treatment until the surgical indications have been fulfilled. Then if cure does not immediately follow, a vaccine can be reasonably employed.

Except for such cases as would be excluded by the foregoing considerations, any infectious process of chronic type, not amenable to specific surgical or medical procedures, is suitable for treatment with vaccines. It should always be remembered that such treatment relies wholly upon the response to stimulus of the body's cells, and that to get the best response everything which can contribute to improve the general health must be done.

Vaccine in Prophylaxis.

Of course, the greatest field for vaccines of all kinds is in prophylaxis and they should always be used, when available, to protect against any chronically present disease such as typhoid, or against infections which frequently recur in particularly susceptible individuals, such as pneumococcus bronchitis, tonsilitis, etc. The question of the duration of the protection induced by prophylactic vaccination is an interesting one. This period probably varies considerably, dependent upon the organism involved and the extent of the treatment. Generally, a conservative view of the evidence on record justifies the statement that it always lasts several months, and often a year or two. I think it is illuminating to compare the duration of the increased formation of specific protective substances with the period of milk secretion following the stimulation of pregnancy. It probably varies just as much and is influenced by similar factors.

Shot-Gun Vaccine Therapy.

No one can think of the foregoing considerations and use a stock vaccine for treatment of a case in which the bacteriological diagnosis is entirely a guess, either his own or that of the manufacturer of the product. Compound stock vaccines (containing a shotgun charge of many varieties of organisms) are even worse, since by no probable chance could any but the minor portion of the menagerie be allied to the bacteria troubling the patient. However, it is not necessary to say much on this score as physicians have awakened to the facts, and besides have learnt that autogenous vaccines are much cheaper in the long run and that with one a bacteriological diagnosis may usually be had, into the bargain. Compare the cost of 20 c.c.'s of autogenous vaccine, containing as many organisms to the cubic centimeter as desired, to the stock vaccine price of about 50 cents a dose.

A stock vaccine in prevention of epidemic disease, such as typhoid, is of course, a different matter. Here we have no choice, but select a number of cultures from typical cases of the malady, add them together and call the mixture "polyvalent." Through use of such a vaccine we induce immunity to the typhoid organisms usually operative. Of course, we could not by this immunize to paratyphoid organisms. This use of a stock vaccine to prevent a particular infection is very different to the use of one to treat a disease of which the cause is only guessed at.

A "sensitized" vaccine, as all know, is one to which has been added a small amount of the serum of an animal previously immunized with the vaccine. To use it is very much as though, in administering hydrochloric acid, one added a small amount of alkali.

Vaccine Dosage.

An autogenous vaccine secured, the question arises as to how much shall be given at the first dose. Here, the main consideration is, what would happen if by any chance we should give too great a quantity and produce a debilitating reaction, as may sometimes follow?

Even if such possible consequences be not seriously harmful to the patient, they would tend to diminish both his and the physician's confidence.

With the possible exception of diphtheria and tetanus bacilli that give rise to appreciable amounts of soluble toxin (to which specific antitoxins have been prepared), no organism, by its mere presence in the animal body, is capable of exciting serious symptoms. There is no evidence of the existence of ready formed poisonous substances within any bacteria—the so-called endotoxins—and all poisonous action by these organisms is confined to the effects of their externally secreted enzymes, and of the decomposition products resulting from the partial digestion of their bodies by specific enzymes produced by the host. It is only when the infected animal becomes "sensitized" to the particular germ, that manifestations of disease arise. This "sensitization" consists in the production of specific enzyme to attack and make soluble, digest, such an amount of the particular bacterial substance, as will suffice to effect the animal's susceptible tissues. When a proteolytic enzyme is feeble and present in particularly small amounts, there is a tendency for the digestion resulting to stop at the earlier stages of protein decomposition; for instance, at albumose or peptone; and as these substances are known to produce the symptoms most characteristic of infectious disease, the manifestations of sensitization are adjudged to depend upon such partial digestion of the bacteria.

The proper amount of vaccine to use in a first dose would, theoretically, be just slightly in excess of that which the body's already developed enzymes could dispose of without noticeable symptom; that is a little more than that which could be immediately reduced beyond the peptone into the amino-acid stage. Since we have, as yet, no practical method which can accurately gauge this, we are compelled to guess at it. Confining our vaccine therapy to the treatment of chronic infections, as recommended, we find that rarely, or never, does a case come to treatment that has not lasted for quite some time; and therefore, we may reasonably conclude that considerable stimulation of resistance has already taken place automatically, and fix our trial dose accordingly. This dose, consensus of opinion has fixed at approximately 100 millions of the organisms concerned.

If such a dose be given, and it be followed by a local reaction: reddening and swelling around the puncture and by a slight rise of temperature, and perhaps by general discomfort for an hour or so constitutional reaction; and particularly by symptoms of increased congestion: more swelling, tenderness or pain at the diseased focus—focal reaction—or by one or more of these three varieties of reactions, and all such symptoms subside within twenty-four hours, we can feel confident that we have approximately struck the proper sized dose. This dose should, however, be repeated and not increased, till it fail to cause such response, since thus we may obtain the greatest effect with the least danger of over-dosage.

Interval Between Doses and Duration of Treatment.

Experience teaches that no reaction to a dose of vaccine is entirely over till the end of at least three days; so such period should be selected as the minimum interval between doses. In many cases the reacting time seems to indicate a week as a better interval. If the primary dose is of the size above suggested, and produces no noticeable symptoms, we should wait at least the three days for precaution's sake, and then increase the amount administered 25 per cent or at least 10 per cent; when, should we strike the reaction-producing amount, we should proceed as outlined above. Again, if the dose be increased thus for the second, third and even the fourth time, and no reaction results, serious consideration should be given to the possibility of having the wrong organism in the vaccine. A first reaction appearing, certainly later than the third of such a series of doses, might be due to the sensitization induced by the preceding injections, and therefore could not be considered as evidence that the contained organism was active in the patient. However, it must not be forgotten that some patients show such feeble reactive power, often indicated by an abnormally low body temperature: (p. m. below 98° F.) that either reaction or benefit is very difficult to obtain.

If the first, or any later dose, produce too severe a reaction, (a particularly large swelling at the seat of puncture, marked disturbance around the diseased area, and constitutional manifestations—fever and malaise—lasting more than twenty-four hours), a considerable reduction in the size of the dose should be made at the next injection, often as much as 50 per cent. Similar routine should be followed when a total failure to react, with accompanying depression, such as was previously stated to frequently show a subnormal temperature curve, is met. In such cases, up and down variation of the quantity injected will necessarily be irregular while we are "feeling out" the sensitizing dose. When this has been reached, and suitable reactions continue, no increase in dose should be greater than 10 per cent; and it should never be forgotten that since it is our object to induce, each time, a slight reaction, the minimum quantity which will effect this, should always be employed.

There is reason to believe that the tissues around the point of puncture, and lymphatic glands guarding the area, are actively responding to the special stimulus of the injection for some days thereafter, so it seems desirable to seek a new area for each succeeding injection. Thus, an arm injected today should not be used for the purpose again for at least two weeks.

The period over which a course of vaccine therapy should be extended depends upon the indications of benefit, but, I think that ten or twelve injections must be given before one can judge as to whether a given patient may be benefited.

"DUNE-DAY" - June 24, 1916

PLACE - Westhampton, L. I.

OCCASION - Regular June Meeting

of the

Associated Physicians of Long Island

For details consult page 260

EDITORIAL

THE DOCTORS' SHARE IN AN EFFECTIVE MILITIA.

THE impressive turnout of earnest men on Saturday, May 13, that marched through the streets of New York to emphasize their conviction that the country's defenses need to be organized and expanded, contained an impressive number of physicians who realize that the questions of sanitation, prohylaxis and the care of wounded in war will devolve upon the Army Surgeon, and must be met by them in the same spirit of earnest cooperation that characterized the other units of the parade, the clergyman, the bankers, the lawyers, the merchants, and all the rest. In order that the doctors' part in national preparedness may not fall behind, the question is just how far medical efficiency has developed throughout the country is well worth consideration. In order to be efficient as a military surgeon, the physician in civil life requires a special training, the scope of which he has no conception of until it is demonstrated to him practically. The need for a large body of well-equipped surgeons in civil life who may be used to recruit the ranks of the regular army to full fighting strength was recognized a number of years ago and the effort was made to provide such a medical reserve in two ways. The medical reserve corps with its two branches, active and inactive, was organized and the medical units of the various State Militia organizations were reorganized on the regular army basis. It was the expectation of the General Staff that by making the drill, equipments and requirements of the militia organizations uniform with the regular army, they would immediately dovetail in if required for active service, and could thus be expanded without difficulty. Although four years have elapsed since this plan went into effect, there is still a decided deficiency as is shown in the resumé of the subject published in the Military Surgeon in April by Major Hess.

The plan contemplated four field armies with a total requirement of fifty-seven field hospitals and fifty-seven ambulance companies. There are at present organized twenty-nine field hospitals and nineteen ambulance companies, leaving a deficiency of twenty-eight hospitals and thirty-eight ambulance companies. If it has taken four years to bring up to government requirement about two-fifths of the requisite sanitary units, it is evident that the remaining units can hardly be promptly organized, drilled and equipped unless a very considerable wave of enthusiasm starts among the doctors of the country who must turn themselves into recruiting officers and bring into service a sufficient number of young men to fill out the personnel of the sanitary troops. For some reason that is not altogether clear the militia have failed to measure up to their responsibility and it seems probable that something more than enactment by Congress will be required to weld the present organizations into the effective body they should be, and it is very evident that the doctors must arouse themselves if they are to take the effective part they should in the programme of National Preparedness.

* * * * *

And by the bye, the Military Surgeon under the able editorship of Col. Edward L. Munson, has assumed a new importance in the field of medical journalism. It comes out in a dress worthy of its position as the official organ of the Military Surgeons of the United States. Its various departments are complete and well balanced. Is one to take it for granted that the unsigned editorials are all the work of its indefatigable editor, as their even excellence suggests? The journal is to be felicitated on the bright prospects which have opened for it.

H. G. W.

"PREPAREDNESS."

THE Session of the Legislature which has just closed, emphasizes the imperative necessity for the medical profession of this State to inaugurate a campaign now to meet the situation which is bound to arise when the Legislature next convenes. Year by year certain bills are introduced, sometimes in one form, sometimes in another, that are aimed to curtail the privileges of medical practice, or to let down the bars for unqualified practitioners. Then there is the ever increasing tendency for the State to assume a more and more paternal attitude toward the working classes.

During the last session the bill providing for the medical care of wage earners failed to pass, as did the so-called Regents Bill, which contained the distinctly vicious clause demanding a yearly registration and an annual tax upon practicing physicians. The strongest point scored against the so-called Mills Bill was its failure to provide specific conditions to insure reasonable compensation to physicians and adequate medical care for the beneficiaries under the act, while the sick-benefit clause was also vigorously attacked. In defense of the bill it has been urged that the question of fees for physicians is an extremely difficult one because of the varying conditions in the metropolitan and the rural districts. It is very justly urged that an average fee of $2.00 for a visit would be unreasonable in districts where a $1.00 fee prevails and it is equally unjust to enforce a minimum fee of, say, $1.00 in districts where $2.00 or more is a common charge. It has also been pointed out that it is customary with many physicians to present a bill in prolonged cases for considerable less than the aggregate amount represented by the total calls. These undoubted facts are used as a basis upon which the claim is made that payment for services will be adjusted by time and demands of individual localities; but the working of the present compensation law has demonstrated how often the surgeon's account comes up for adjustment before the commission, and it is evident that the physicians cannot be trusted to render bills against the state. The temptation to multiply unnecessary calls is strong; in private practice the patient himself is qualified to contest an excessive charge and is quite ready to do it, while on the other hand the tendency of corporate bodies is to demand too much for too little. The excuse is often brought forward that a physician's charge to a working man should be only what the working man can reasonably afford to pay and that, therefore, it is unfair for a physician to expect the same remuneration as he would get from an affluent patient; this seems to be a prevailing idea that cannot be too strongly combated. It requires just as much skill and patience and assiduity and just as expensive an education to treat typhoid fever in a hod-carrier as in a millionaire. The fact that the hod-carrier must either go to a hospital or accept inadequate service at home is exactly for the reason that the well-qualified physician cannot afford to give him time and skill and mental and physical wear and tear. If the state recognizes that the hod-carrier needs the best care, the state must bring the means to pay for it and should prepare to pay, if not the maximum fee, at least a sufficiency to represent a fair percentage of profit on the physician's stock in trade—education, experience and limited time. It is for this reason, that assurance must be given that physicians shall receive adequate pay, that the medical profession stood out against the bill. The whole profession recognizes the wisdom of providing good medical attendance for every one in the state, it is heartily in accord with any attempt to better conditions for that class of society upon which the structure of the state is built, the poorly paid working man, but because the medical profession in the past has recognized this need and has given freely and cheerfully of its best, is no reason why when a proposition is made to provide paid care for the working man the doctor should be the one to be left out of the shuffle. Because this bill is coming up again next fall and because it will be modified to some extent, it is essential that the medical profession of this state should begin actively at once to protect its just rights and to see that the proper safeguards shall be incorporated in the next draft of the bill; and while we are about it let us keep a keen lookout along the main line of defense and be forehanded enough to nip some of our regular assailants before their attack gathers force enough to be dangerous. It only requires vigilance and unity and the same tactics that our opponents use. Let us vary our usual programme and instead of howling after we are hurt, prevent injury by action. H. G. W.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY

The stated meeting of the Society was held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, on Thursday, Dec. 2d, 1915.

The President, Roger Durham, M.D., in the Chair.

Report of Cases:
  A. (1) Nephrectomy. Patient.
    (2) Gastric Ulcer.
William V. Pascual, M.D.
  B. (1) Vesical Papilloma. Fulguration.
    (2) Gastrostomy for Spasmodic Stricture of the Esophagus.
John Horni, M.D.
  C. (1) Perforated Gastric Ulcer. Three Cases.
    (2) Epithelioma of the Tongue.
    (3) Thyrotoxicosis.
Arthur H. Bogart, M.D.
  Paper: "Comments on the Progress of Surgery for the Year 1915."
William Francis Campbell, M.D.
  Discussion opened by John C. MacEvitt, M.D., and William Linder, M.D.

Gastric Ulcer.

William V. Pascual, M.D.

These are very simple cases, but still there are some points of interest about them and it was for that reason that I thought it wise to put them before the Society.

I would speak of the case of gastric ulcer first.

This was a young woman twenty-five years of age, of a very neurotic tendency, who had drifted around for about two years from one doctor to another and had had all kinds of treatment and examinations and x-ray examinations, but she never seemed to get anywhere. Her symptoms were somewhat vague and she did not present the typical symptoms of gastric ulcer, and when she came into my hands it was with the idea that she wanted something done to determine what her trouble was. She requested an exploratory operation. She gave a history of some indigestion symptoms for years—rather vague symptoms. In April, 1914, I first saw her. She had been experiencing considerable pain in the epigastric region for several months. She gave no other symptoms at this time—just pain in the epigastric region and somewhat to the right of the median line. This pain came on shortly after eating and lasted an hour or more. She had no vomiting, just nausea, occasionally. The pain which she had radiated sometimes to the right or through to the back, but not at all times. These attacks would last for days or weeks, then improve and again appear, but were never entirely absent. At times there was tenderness over the appendix. She always suffered with constipation and had considerable flatulence. It was unusual for her to complain of evidences of hyperacidity. No hematemesis. No jaundice. She staid with me a short time and then began to drift and I did not see her again until August of this year when she came into the Holy Family Hospital. At that time she stated that she had just been through many examinations. She had been x-rayed. She had had gastric tests. She had been through a course of duodenal feeding, but all to no avail. She still had her epigastric pain. She was admitted to the Holy Family Hospital on the 2d of August, 1915, and as she had been through all these examinations she refused any further examination and requested an exploratory operation. She was in a very depressed state. I might say that I was able to obtain some of the data in connection with her examinations. X-ray examination in

November, 1914, was negative. It was a simple radiograph of the stomach. The x-ray findings in July of 1915 showed marked antral activity and hypermotility of the whole tract with a suspicion of gall-bladder adhesions, but no ulcer findings.

On operation she showed no adhesions anywhere in the gastro-hepatic region; no abnormal condition evident around the duodenum or pancreas, and the gall-bladder was normal. The stomach was small and in good position. She had what appeared to be a partly-healed ulcer; that is, there was an area of induration one-half inch in diameter on the posterior wall of the pylorus, close to the pyloric vein. There did not seem to be any evidence of adhesions. It looked like an ulcer that was partly healed. I figured that it had been considerably helped by the duodenal feeding which she had had and decided, inasmuch as she had had this long history of gastric pain, that this was the only thing which was evidently causing it, and accordingly did a posterior gastro-enterostomy. The appendix was found kinked by a short mesoappendix. This was removed. She made an uneventful recovery and has shown a very rapid improvement of the stomach symptoms. She has returned to solid food and has no distress at all.

The points of interest about this case are that there were very few of the cardinal symptoms of gastric ulcer present. The one symptom that she had was persistent periodical pain. The vague history and the indefinite and uncertain x-ray findings made me feel that this case was worth presenting. I was unable to get the patient to appear. She is a very nervous young woman and wouldn't consent to coming here.

Nephrectomy. Patient.

William V. Pascual, M.D.

This case, in which I present the patient, is that of a young girl who was twelve years of age when she was treated, who showed a probable infection of the perirenal region on the right side following an infection of the right thumb.

In looking up the literature on this point I found that there were very few cases reported where a metastic hematogenous infection, which was probably the cause in this case, was present. I found a series of fifty-nine cases of perinephritic abscess which occurred during a period of fourteen years, reported by Richardson, of Boston. These cases were at the Massachusetts General Hospital, and in them he analyzed the etiological factors and there were nine cases showing a probable hematogenous metastasis. Of these there were only three that looked as though they were more likely cases of this type. The others (six in number) were cases where the focal infections were influenzal or streptococcal, but the pus infection in the kidney was proven to be due to the staphylococcus.

This is a case of perinephritic abscess following a peripheral pus focus with a secondary nephrectomy.

The patient was twelve years of age at the time she was admitted to the Holy Family Hospital, which was on October 4th, 1911.

Present History: Seven weeks previously the patient ran a splinter of wood under the nail of the right thumb. Infection followed and this was treated at the Jewish Hospital Dispensary. It spread in the bone, and she was admitted to the Jewish Hospital and operated on for that condition, an incision of the finger and bone curettage being done. She remained in the hospital for three weeks and was running a mild septic course, when the mother, somehow, got the suspicion that she had typhoid and took her home. The finger had healed by that time. On being taken home she was treated by her family physician, who assumed it to be typhoid, although he had had several blood tests made and they were all negative. He treated the case at home as one of suspected typhoid. He called me in to see her on October 3d, 1911, and at that time she had been seven weeks with this septic course. She was running a temperature between 100 and 102 and was in a very emaciated, anemic state. There was a large mass occupying the right abdomen and right lumbar region extending from the costal margin almost to the iliac crest and as far forward as the anterior axillary line. It was rather boggy and very tender. There was rigidity of the rectus muscle and right psoas contraction. A diagnosis of perinephritic abscess was made and the patient was removed to the hospital. On the next day, October 4th, 1911, a lumbar incision evacuated about a quart of pus and the kidney was delivered and examined and found to be somewhat enlarged. The edges appeared like a congested kidney, but there was no surface evidence at that time of infection, so the kidney was replaced and left with a drain. Examination of the pus showed a simple staphylococcus infection. On account of the long history of sepsis, she was given a staphylococcus vaccine every third day. She ran a septic course, although her general condition improved somewhat. The septic condition, however, continued, so on the 31st of October (a little over three weeks after the primary operation) it was decided to explore the kidney again. The kidney was delivered and incised and found to be studded throughout with multiple abscesses of small size, so the kidney was removed. General improvement followed and the patient left the hospital on December 11th, 1911.

The post-operative pathological report showed simple staphylococcus infection and extensive suppuration in the kidney. The interesting point about this case is the etiological factor. Another point is this: I firmly believed at the time that the kidney was removed that it had been somewhat septic at the time of the first operation, but still I certainly think it would have been unjustifiable to have made an incision into the kidney at that time, and it was justifiable, I think, to give it a chance, so the tentative conservation was worth while.

I brought her up here more because of the fact that she has developed so wonderfully since that time. By the way, I might add that I didn't see her from the time she left the hospital, when she went back to the care of her doctor, until a year ago this past summer, when, her doctor being out of town, she came to me and still had a sinus at the site of the old wound and I found that it had healed and opened a number of times in the period of nearly two years since leaving the hospital, so I took her to the hospital again and cleared that up, finding a twisted silk ligature used on the pedicle at the bottom of the sinus. It healed very rapidly after that.

Gastrostomy for Spasmodic Stricture of the Esophagus.

John Horni, M.D.

Dr. William Linder, in discussion, said: "These spasmodic strictures or spasmodic conditions have been well and very successfully handled by Dr. Plummer, of Rochester, with his method of dilatation, and when I was there he showed me an old man of about seventy years who nearly starved to death, and, ordinarily, in such a case as that was, I would have made a diagnosis of carcinoma of the esophagus. The patient was in such a starved condition that he had to do a gastrostomy to feed him up, and after four weeks' time he began to pass his string to feed the man and on this a bougie and on that a bag with hydrostatic pressure and then dilated the esophagus. I was a little skeptical when he first presented the case, and on seeing the skepticism written on my face, he said he would take me to the patient's house, which proved to be, as he called it, 'a dollar hotel.' He was an old farmer. Before proceeding I said to the doctor, 'Don't you think that there is a great deal of nervous element in this case?' and he said, 'Wait; I'll show you.' He gave the man a drink of water, but he couldn't take a mouthful of it. He then passed his bougie and dilated the esophagus and before I left he drank four glasses of milk, gulping them down as if he were almost dehydrated. That is some eight years ago and since then he has done excellent work in that line and these strictures can certainly be dilated, but they sometimes recur with his apparatus. Only when a patient is absolutely starving are we justified in doing a gastrostomy to feed the patient up, and then later dilatation can be done. They seem to do very well indeed."

Epithelioma of the Tongue.

Arhur H. Bogart, M.D.

Patient H. D., sixty years of age, nativity U. S., came under our care on October 10th, 1915, complaining of a sore tongue. There was no history of cancer in the family. The patient has always smoked a good deal and used a moderate amount of alcohol. No specific history. Wassermann negative.

The present trouble began about nine months ago with a small sore on the top of the tongue which had grown and ulcerated and now occupies the greater part of the left side of the organ. The growth is quite painful and interferes with his speech.

Examination at the time of admission showed a large ulcerated area on the left side of the tongue. Apparently the floor of the mouth was not involved. There were no palpable glands in the neck.

On October 27th an excision of the gland-bearing area in the left side of the neck was done and the lingual and facial artery tied. This wound healed primarily and on November 12th the left half of the tongue was removed. There was very little bleeding following the removal of this portion of the tongue. This part of the operation was made easy by the ligation of the vessels at the previous operation.

After the operation the patient was kept off his back as much as possible to avoid pulmonary complications, and, with the exception of the usual discomfort following such an operation, he has made a good recovery.

In a recent case far more extensive than this one and in which it seemed that a radical excision was not advisable, we used the cautery on the growth. In spite of all efforts, this patient developed a septic pneumonia and died as a result of extensive sloughing following the cauterization.

Thyrotoxicosis.

Arthur H. Bogart, M.D.

Patient R. B., female, age twenty-two, nativity Germany, was admitted to the Kings County Hospital on September 14th, 1915.

Chief Complaint: Swelling of the thyroid gland, tremor of the fingers and exophthalmos.

Except for nervousness on the part of the mother, the family history is negative so far as the present condition is concerned. The patient's previous history is negative except for measles at the age of two years.

The present trouble began about six months ago when the mother noticed bulging of the eyes. For the past year the patient has herself noticed a tremor of the hands, especially when writing. She was not aware of cardiac palpitation until she was told of it by her physician two weeks before admission to the hospital. The tumor in the neck was first noticed about three months ago and for the past two weeks the patient has had some difficulty in swallowing.

The patient has suffered more or less from headaches for the last four years. In the last year she has lost weight, falling from 189 to 138 pounds. She has suffered somewhat from nightsweats, but has had no cough or expectoration. She has also had several attacks of diarrhoea.

Examination: The patient is somewhat under-nourished and anemic. There is marked exophthalmos present, also tremor. The lungs are negative. The heart shows a systolic murmur; moderate tachycardia, 100 per minute. Reflexes are exaggerated.

This patient was operated upon on September 19th, 1915, under local anesthesia. After having been given 1-150 gr. of hyoscin and 1-4 gr. of morphia, we used 2 per cent of novocain in the skin and 1 to 400 solution in the deeper structures.

The patient made an uneventful recovery and is at present in good condition.

Perforated Gastric Ulcer. Three Cases.

Arthur H. Bogart, M.D.

Dr. Paul M. Pilcher, in opening the discussion, said: "I would like to ask Dr. Bogart if he has ever seen a case or done a case himself of perforated duodenal ulcer which he has drained and in which he has regretted draining."

Dr. Arthur H. Bogart, in answer to Dr. Pilcher's question, said: "Yes, I regretted draining in the one I did. I think it led to the infection in the abdominal wound. When I opened it, the right kidney fossa was filled with what seemed to be purulent material. I think if I had sponged it out and closed it up I would have been better off, but I didn't have the nerve to do it. In another case operated within five hours of the onset of the symptoms I closed up without a drain with no bad after-results, and I think it is a perfectly safe procedure."

Dr. Paul M. Pilcher, in discussion, said: "I think those cases should all be drained. If you want to drain that fossa you can drain it through a stab wound in the side, but I think it is very much safer to drain all of those cases. I have never seen a case in which drainage was regretted, except the one which the doctor reports.

"There is another point in the matter of diagnosis and that is this: cases of acute pancreatitis very closely resemble these cases of perforated gastric and duodenal ulcer. Sometimes when you expect to find a perforated ulcer you will be surprised upon opening the abdomen to simply find some bloody serum. I think it is very difficult sometimes to distinguish between those cases.

"I have seen two cases of acute pancreatitis in which the history was quite typical, pointing towards the upper abdomen as the source of the calamity and making one think very distinctly of perforated ulcer of the stomach or duodenum. Both of those were cases of acute pancreatitis."

Dr. Thomas B. Spence, in discussion, said: "As this question of drainage is brought up I think that we may as well have a little expression of opinion. I would like to ask Dr. Pilcher in return if he has ever seen a case where the drain has been left out that he has regretted. In other words, it is up to the man who uses the drain to prove its usefulness. Personally, I think that in most cases it might better be left out, from the fact that you will more likely get an infection of the abdominal wound, and for that reason these cases will not go along so smoothly as if you left out the drain entirely. I realize that there are some cases that are better drained, but, as a rule, if you get a case early enough to save it at all the drain is unnecessary."

Dr. Raymond P. Sullivan, in discussion, said: "The question of drainage in dealing with perforated gastric or duodenal ulcers is interesting. I think that we are coming more and more to do less of it. This is especially so when the case comes to operation soon after the perforation has taken place. My routine is to suck out, with Pool's instrument, all the gastric contents found either in the pelvis, kidney fossae or general peritoneal cavity, and then close the peritoneum completely. However, a rubber tissue drain is placed in the wound down to the peritoneum. This will drain the outer layers of the wound in case infection may be harboring there. Where the case comes to operation long after, eight or more hours, perforation and the escaped contents is noted to contain meat fibre, etc., it may be wise to do some intraperitoneal drainage. I think it a safe rule to clean out as quickly and thoroughly as possible all the fossae and close the peritoneum. Drain to the peritoneum for forty-eight to fifty-six hours. This procedure has quite recently proved very successful in my hand in three cases."

Dr. William C. Woolsey, in discussion said: "As to the matter of drainage in these cases, reasoning from the standpoint of surgical pathology, there seems logical grounds for omitting artificial drainage ways in early cases. The relative sterility of the contents of the upper gastro enteric tube, has been proven, and experimental injections of limited quantities of stomach contents into the peritoneal sac, by the speaker has regularly produced a chemical peritonitis, the exudate of which is characterised by a preponderance of serum with a minimum of cellular elements; not a true purulent exudate loaded with dead leucocytes as is the case in peritonitis of bacterial origin.

"Early operation has to deal with this nonpurulent stage of the exudate and the normal drainage capacity of the peritoneal sac is capable of handling enormous quantities of it.

"The question of artificial drainage then rests clinically upon the time after perforation the operation takes place and pathologically upon the existence of a simple chemical peritonitis exudate or one of added secondary infection."

Dr. William Linder, in discussion, said: "In my experience I find that you cannot drain general peritonitis and if I have a case of general peritonitis it is my custom to mop up all that I can from the kidney fossa and put the patient during the operation in a semi-Fowler position; that is, lowering the table. I am always in the habit of putting in a suprapubic drain of a curved glass tube. That is merely to care for the fluid which drains from the pelvis that I could not mop out. As a rule, within from twenty-four to forty-eight hours there is no more secretion and the tube may be removed and there is no further trouble. In spite of this, however, I have had three or four cases where on the fourth week there developed a pelvic abscess. In two of these I opened up the anterior wall and emptied out foul-smelling pus. These three cases made an uninterrupted recovery and in only one (I am speaking of pelvic abscesses) did I have a suprapubic drain; so I believe from these three cases that there is a certain amount of infective material which will gravitate to the pelvis. The most important thing is to put the patient in an exaggerated Fowler position and just put in a curved drainage tube."

Dr. Thomas B. Spence, in discussion, said: "I think the cases which Dr. Linder has reported very beautifully illustrate the harmfulness of drainage. Those pelvic abscesses would never have occurred if he had left the drains out."

Dr. Paul M. Pilcher, in discussion, said: "I am very glad I started this discussion because I feel convinced that the methods spoken about of not draining are logical. I think the cases I have seen have not been so fortunate as these reported and have been those in which the perforation has oftentimes come to operation a much longer time than six hours after the perforation itself, and I can see that it is perfectly logical, to my mind, in the early cases to close the peritoneum at least."

DR. JOSEPH P. MURPHY, in discussion, said: "I have operated on many cases complicated with a general peritonitis. When those cases occur in the female it has been my custom to sometimes make an incision through the vagina posterior to the uterus and I believe that in many of those cases I have saved females where if they were males they would surely have died. I know it has been well proven that in cases of peritonitis, or in any cases of operation around the peritoneum, when you put a tube in within twenty-four hours the drain is walled off; so I cannot see that any damage has been done in those cases where the pelvis has been drained through the vagina."

Paper: "Comments on the Progress of Surgery for the Year 1915."

William Francis Campbell, M.D.

DR. WILLIAM LINDER, in opening the discussion, said: "It is like taking coal to Newcastle to discuss Dr. William Francis Campbell's paper. All that I can do is to merely emphasize a few points.

"While in Germany I spoke about the cancer problem and in the University Clinic they told me that through the education of the public they had been able to get (and I received the same information from Wertheim in Vienna), through the education of the peasantry, a great reduction in the number of inoperable cases of carcinoma of the uterus; that whereas formerly the percentage of inoperable cases was as high as sixty and seventy, they now get only about twenty inoperable cases, and one unique method that they follow when a couple applies for a marriage license is this: a printed list is given to the peasant bride, with instructions that any irregularity of menstruation after a certain period in her life is suggestive of carcinoma (I am showing that they instruct the very densest women), and that they should apply immediately to the University Clinic; and this system of education has resulted in a wonderful decrease in the number of inoperable cases of carcinoma of the uterus.

"I think a propaganda of that kind in this country when women apply for marriage licenses, would be very beneficial. It seems to me that it hits the nail on the head. Every female should know that any irregularity in the menstrual flow is suggestive of a possible pathological condition and that the thing to fear is cancer. There is another very important thing which we cannot reach here and that is, they tell these women to apply to the University Clinic and they are studded all around the Empires there.

"I, myself, and every one of us here have noted the wonderful effect of blood transfusion, but I desire to revive the question of the value of saline intravenous transfusion in cases of emergency. I have only recently had the opportunity of using it in four cases and they stand out very prominently in my mind and have also taught me the lesson that a large quantity of saline transfused into the veins is very valuable. I have always been taught to believe that in cases of post-operative hemorrhage, or in cases of hemorrhage from any cause whatever, we should not increase the blood pressure by introducing large quantities of fluid into the system, on the mechanical theory, which ought to hold good in these cases, that if you have an open blood-vessel and increase the amount of fluid you will simply bleed the patient in the peritoneal cavity or wherever the concealed hemorrhage may be. I have had one such case and Dr. John verv recently had one where a panhysterectomy was done. Although at the close of the operation there was no bleeding, two or three hours after the house surgeon reported the presence of some oozing from the loose vaginal pack. I saw the patient and removed the pack and repacked. I was quite sure that there was no intraperitoneal bleeding. Three hours after that the pulse went to 160 and still there was oozing in the vagina. I accordingly took the patient upstairs for the purpose of seeing whether or not one of the ligatures had not slipped, and, under gas anesthesia, hurriedly looked at the peritoneal cavity, but found no bleeding intraperitoneally, and during the time that the operation was going on we gave her 600 c.c. of saline intravenously. The anesthetist reported her condition as good, and although she had been almost pulseless, she left the table with a pulse of 120. This improved condition lasted for about four hours and in four hours I again visited the patient, only to find her in very bad condition. She was unconscious, pale and almost ready to go out. As a last resort, I did a quick transfusion on her in the room and did not stop until I had a good pulse and gave her 2,000 c.c. (over two quarts) of saline and she opened her eyes and made an uninterrupted convalescence.

"The second case was one of bleeding after a posterior gastroenterostomy, although the precaution had been taken of ligating the vessels prior to doing the gastroenterostomy, particularly on the stomach, where I cut the serous muscularis, and as we know that the blood-vessels are on the submucosa, I first ligated them and then did the anastomosis. This patient bled and was almost exsanguinated from loss of blood. Basins were constantly filled with blood. We gave this patient two quarts of saline and there is no question in the minds of all who have seen the case that this patient has been saved.

"Dr. John very recently brought in a case of gastric hemorrhage. The patient was almost pulseless and as white as a sheet. She was a woman fifty-odd years of age. We repeated in her case the procedure followed in the other and although extremely anemic, she has been going along very nicely, and I think her life has been saved.

"I merely mention these things so that in the middle of the night in an emergency you won't look around for a donor. I think it is the quantity of fluid lost that the patient is suffering from. You must give the patient enough fluid mechanically for the heart to act.

"I was interested to hear about this common duct procedure. I think I reported to this Society about four years ago a case in which I operated on a man who had a stricture of the common duct, which was diagnosed as cancer. He had a very short stump of the hepatic, just below the bifurcation. I introduced a rubber tube into the hepatic duct and buried the blunt end of the tube in the duodenum, brought up the duodenum close under the liver and covered over the entire tube with an infolding, so to speak, of the duodenum. This tube was left in place and although drainage was put alongside of it, there was no by-leakage at all from the wound. The patient made an uninterrupted recovery and during the thirteen months preceding had two or three attacks of recurring jaundice which cleared up without any temperature, and at the end of thirteen months he passed the tube per rectum. It is now four years and he is in fine shape and has gained about eighty pounds.

"Since then I have had a case where I had a re-constructed duct and used a T tube. The two short arms of the T go into the hepatic duct and the other into the duodenum, or the remnant of the common duct, and the long tube goes out through the wound. The advantage of this is the fact that you have drainage outside and if you find that the patient is draining too much bile you can clamp the tube and allow some of the bile to go into the common duct. You can remove the T tube in a week or ten days and in a week or two you have very prompt healing."

Dr. George I. Miller, in discussion, said: "If I may have permission to do so, for the sake of comparison with the transfusion valve which I was privileged to exhibit to you on April 1st, I would like to show you a 'younger brother' for blood transfusion. For the sake of comparison I would like to show you the original transfusion valve, which I have already shown to the members of the Society, for the sake of the gentlemen who were not here and who have not seen it before.

"Blood transfusion should not be used wherever and whenever you can save your patients and cure them with salt solution. Always use salt solution in every case where the patient can be cured and life saved, but in cases where salt solution will not help, such as cases of gas-poisoning where the oxygen has been replaced by carbonic acid, or in cases of hemophilia, or in cases of purpura hemorrhagica, or in cases of secondary anemia, or in cases of acute hemorrhage where the red blood corpuscles have run down to one million or less and salt solution will not replace the red cells and only whole blood will replace the number of red cells, then resort to blood transfusion.

"The original apparatus, which I have brought here, consists of a valve. By means of one record syringe attached to the lowest stem of the valve and by introducing one arm into the vein of the donor and the other arm into the vein of the recipient and an intermediate cannula (any cannula that you can find on the market or the special cannula which I have shown here, will answer), you can draw any quantity of blood you desire from the donor and transfer it to the recipient. Assuming this to be the vein of the donor, I introduce the arm of the valve into the arm of the donor and fill the syringe with blood. By turning the lever on the top I empty the blood into the vein of the recipient and then, by drawing again, I refill the syringe and by going back and forth I get the desired quantity of blood. By means of this valve, in my absence, two junior assistants of Dr. Polak's, a couple of weeks ago, transfused at the Long Island College Hospital, without ever having handled the instrument before, 600 c.c. in fifteen minutes from a donor to a patient.

Now tonight I desire to show you a new instrument, thinking it might be appropriate before the closing year to bring all the devices we can for 1915. This new instrument works equally as well as the other and is equally as simple. I tried it out on the 30th of November at the Jewish Hospital on a patient. Instead of having a lever on top needing a hand to move back and forth, I have dispensed with the need of the hand by having a sliding arrangement, and by means of one record syringe I do the same as before—introduce this into the vein of the donor and fill the record syringe. Having filled the record syringe, without the need of the extra hand, the syringe itself moves the slide and the blood is emptied into the vein of the patient, and, by going back and forth, with the syringe the same hand can draw the blood and empty the blood.

"I will pass the two syringes around. We sterilize it the same as any other instrument and use it and the rapidity by means of which you can draw and empty the blood prevents the possibility of coagulation, for there isn't time enough for coagulation to occur. Coagulation does not start before a lapse of two minutes and you empty and fill the syringe five or six times in one minute, so there isn't time for coagulation.

"Any one who can do an intravenous injection of salt solution can easily couple the tip of this valve to the cannula and perform a transfusion.

"I also desire to pass around a cannula which may be found on the market and which I have exhibited here before.

"I have done thirty-five transfusions this year and believe that if you only make an attempt to transfuse one case you will experience no difficulty and all previous fear of transfusion will have disappeared. I have noticed that any one of us is ready to do any major operation. We are ready to amputate limbs, do gastroenterostomies and what not, but when it comes to a transfusion there is a peculiar shrinking feeling and we would rather do a salt solution than a transfusion.

"Q. 'What veins do you use?'

"A. I use the median basilic or cephalic."

Dr. Warren L. Duffield, in discussion, said: "I would like to say that at St. John's Hospital we have used McDonald's preparation of pyxol since last summer with very satisfactory results. I was moved to look for something less irritating than iodin, particularly for use in herniotomies in children, and happened to see McDonald's paper. I think I have used it practically in all cases since—bone cases, joint cases, herniae and laparotomies, and always with a great deal of satisfaction.

"As far as using it as a disinfectant for the hands is concerned, I find this about it: if you are not careful to allow the hands to dry thoroughly before putting on your gloves and gown, the evaporation of the solution under cover seems to cause a certain amount of irritation; that is, smarting for the time being, but no permanent irritation."

Dr. Thomas B. Spence, in closing the discussion, said: "I think that we have to be very careful in making up any of the solutions in which denatured alcohol is used. The druggists will put all kinds of things into alcohol to denature it, and some of these may be very irritating. At our hospital we use carbolic acid. They also use formalin sometimes."

TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

The 206th Regular Meeting was held at the Library Building of The Medical Society of the County of Kings on April 2nd, 1915.

The President, Dr. O. Paul Humpstone, in the Chair.

Fibroid Polyp of the Uterus.

Dr. Hussey: The specimen was removed from Mrs. B. M., aged 59, married, admitted to my service at the Brooklyn Hospital on Feb. 28, 1915. Her chief complaints were pain in the lower right abdomen, vagnial discharge and irregular bleeding. About one year ago she began to have pain, then a foul, irritating vaginal discharge which has been bloody occasionally during the last few months. Examination showed a poorly nourished, small, thin woman; tongue clean, color good. She had a soft systolic murmur, heard over the tricuspid area, which was probably hemic. The uterus was in normal position, small, and the fundus felt hard and nodular. A diagnostic curettement was done under ether. There was a little detritus and the bleeding was moderate, but the curet caught a pedunculated growth near the fundus. In view of the age of the patient, the return of the bloody flow after the menopause, the fetid discharge, the hard nodular feel of the uterus, and the small tumor felt with the curet, it was deemed wise to do a pan-hysterectomy by the abdominal route on the supposition that we had to deal with malignancy. The uterus was taken out and the recovery was uncomplicated. The pathologist reported fibroids of the uterus. The specimen is pretty well shrivelled up. The fibroid was in the upper part of the uterus and the uterus is really turned inside out by it. One can find the pedicle of the tumor on which the curet caught.

Adenocarcinoma of the Uterus.

Dr. Hussey: Mrs. L. M., age 48, unmarried. Seen on Dec. 3rd, 1914, with Dr. Grant, at the Bushwick Hospital. Her chief complaints were, vaginal hemorrhage, foul smelling discharge, and loss of strength and weight. Menstruation ceased at the age of 46 for one year, when it began again and was regular for five months. For six months she has had a brownish watery discharge from the vagina. For the past five months she has been bleeding at frequent intervals and lately there is a constant bloody discharge. Her previous personal history is good and her family history is negative. Physical examination showed a well nourished woman of full habit, skin clear, tongue clean, chest normal. The abdomen showed a smooth, hard, round tumor in the region of the uterus coming to the level of the symphysis, movable and not tender. The superficial glands were not enlarged. The vaginal examination revealed a uterus the size of a two and a half months' pregnancy, hard, movable and tender. The adnexa were negative. No pelvic glands could be felt. The cervix was normal. There was a thin, dark, foul smelling discharge. The clinical diagnosis was carcinoma of the uterus. A curetement was done and the scrapings submitted to the pathologist who reported adenocarcinoma. Seven days after curetement I did a panhysterectomy. The postoperative course was uneventful. This was a case in which the hysterectomy should have been done at once. The specimen shows a well marked growth in the fundus. This was a perfectly plain case to diagnose clinically and the uterus should not have been investigated before operation.

Epithelioma of the Cervix Complicating Pregnancy.

Dr. Hussey: Mrs. L. L., age 38, was admitted to my service at the Brooklyn Hospital, Jan 27, 1914. She was a multipara near term and was having labor pains with bleeding from the vagina. Her physician had diagnosed obstructive thickening of the cervix. Her family and previous personal history were negative. Menstruation began at 13, was regular and normal. The present pregnancy was complicated by a monthly flow from the vagina resembling a menstruation in character. Pregnancy was not diagnosed until after life was felt; she really made her own diagnosis. In September she was examined at a New York clinic and reported to be in a normal condition. Vaginal discharge has been present during the later months. Vaginal examination revealed a thick hard, ring shaped growth of the cervix; the external os was dilated about two fingers and the head was presenting in the L.O.A. position. A clinical diagnosis of a malignant growth was made. The growth had an irregular, hard, ragged, nodular feeling, a condition of great hypertrophy, and upon looking at it I had no difficulty in making a diagnosis. I took a section from the cervix and the pathologist did a frozen section while I was doing an abdominal section. I then did a panhysterectomy. The patient came off the table in bad shape but recovered from her shock and went on for several days apparently doing well when she had a rise of temperature and the wound suppurated profusely. She was very sick for several weeks but finally made a good recovery and left the hospital in about forty-eight days. She gained about twenty-five pounds during the summer but came back in September complaining of pain. A vaginal examination showed a thickening of the upper vagina and every evidence of a recurrence of the carcinoma. She is having radium and x-ray treatments with some relief but has pain in the upper abdomen and neuritis of the arm. In presenting these specimens I would call your attention to several things: In the case with adeno-carcinoma it was a simple, easy proposition to make the diagnosis with nothing more than the examintaion and she should have had a panhysterectomy without further delay. In the fibroid case the diagnosis was wrong and yet I maintain that the management was right. In a woman who has passed the menopause, with such a history, with a uterus that felt as hers did bv manual examination, and with the mass felt by the curet, there should have been a hysterectomy; otherwise how will we cure malignancy in its incipiency?

Dr. Judd: I cannot add anything to what Dr. Hussey has said, except one remark, and that is that there have been many cases of cancer reported cured after an infection. We have here a case not cured after an infection.

Dr. McNamara: It was my privilege some years ago to see a case similar to the adenocarcinomatous condition reported by Dr. Hussey which was operated upon by Dr. McNaughton. She lived only one and one-half days after the operation. It was rather a task to remove the uterus and fifteen years ago it was considered a more severe procedure. In the fibroid case I should like to ask Dr. Hussey why he did not remove the uterus vaginally. The carcinoma case is interesting and rather rare. I cannot quite agree with him that clinical symptoms are sufficient for diagnosis in such cases.

Dr. Pool: Dr. Hussey's case of fibroid is of interest, as it shows the difficulty of making a diagnosis before operation in some of these cases. I have recently operated upon a case somewhat similar. The woman was thirty-four years old and single. Five years ago she had symptoms very much like those of her recent attack—menorrhagia and extreme pain during menstruation. Dilation and curetage at that time relieved her trouble, and until the last few months she was well. But the last four or five periods had been attended with increasing pain and flow. Examination showed a uterus of normal size and apparently normal consistence, in the third degree of retroversion. The adnexa were negative. Upon curetting it was noted that the instrument caught on something in the upper part of the cavity which could not be removed. The abdomen was then opened, and a small movable uterus was found which, even upon direct palpation showed little that was abnormal except a few small subserous fibroid masses. I then split the uterus open and discovered the cause of the trouble, in a fibroid polyp about an inch long dependent from the fundus. The uterine wall was also studded with very small fibroid particles. Although hysterectomy was not desirable because of the age of the patient, it was thought advisable on account of the multiple interstitial growths, and the upper part of the uterus was removed. This case is recited as an illustration of the aid to diagnosis which may be obtained by opening the uterus before removing it.

Dr. Mayne: I had a case fifteen years ago in a woman who weighed probably two hundred seventy-five pounds. She had had diabetes about ten years. She had a foul discharge which was at times sero-sanguinous which had continued for four or five years. Operation was considered and after about a year of careful dieting the sugar was reduced to less than one per cent. We made a diagnosis of submucous fibroid and under gas-oxygen anesthesia we were able to dilate the uterus, surround the tumor with a snare and remove it. The woman is still alive and is about sixty-two years of age. The discharge subsided promptly and there was no further trouble.

Dr. W. B. Chase: About fifteen years ago I saw a woman with a cervical cancer who was operated upon at St. John's Hospital, when it was removed. Whether she had a second operation or not I cannot say. She became pregnant and entered the Bushwick Hospital when a recurrence of the cancer was discovered. She was about two months' pregnant. I amputated the cervix and removed the growth with the thermocautery. She had a quick convalescence and went through the labor. After two years she came back with a recurrence of the growth and I removed it in the same way.

Dr. Hussey: In reply to Dr. McNamara regarding the case of adeno-carcinoma; given a case of an unmarried woman, nearly fifty years of age, with an absolutely negative past history, a menopause without symptoms, a period of amenorrhea of a year followed by flow, with a foul discharge, and loss of flesh and strength, what else can it be? That is why I said that diagnostic curetage is not a scientific procedure. In regard to the method of operation in both cases. One was a stout woman with a deep pelvis in which the technical difficulties would have been excessive. Furthermore, I believe that cancer of the body of the uterus should be attacked from above. The second case had a very small vagina. I was interested in the case recited by Dr. Pool and his suggestion of splitting the uterus. I did split the uterus, but then I was in doubt; it was not characteristic.

Sarcoma of the Uterus; Carcinoma of the Ovary.

Dr. Pomeroy: This specimen is from a married woman, paruos, aged fifty years, whom I saw last April. She at that time was suffering from menorrhagia and her hemoglobin was down to fifty per cent. She was living out of town, and, as her family physician urged that something be done, she was sent to me. She had not passed the menopause. Upon examination she looked cachectic and seemed to show the presence of malignancy. She was curetted and I obtained about two drams of material which was examined by Dr. Hulst who pronounced the condition a round celled sarcoma. Ten days after that I had her in the Brooklyn Hospital. The vagina was swabbed with five per cent Tr. Iodin, the cervix was sewed up with black silk, a circular incision was made around the vaginal junction and I then opened the abdomen. The left ovary was found to be cystic and about the size of a goose egg, slightlv adherent and it ruptured, the contents proving to be papillomatous and presumably malignant. I did a panhysterectomy. The interesting feature was the presence of the sarcoma of the fundus of the uterus and the carcinoma of the ovary, this being one of the unusual combinations, but authentic. What is still more interesting is that in February, nine months after the operation, she is in perfect health with no induration in the pelvis and no symptoms whatever.

Adenocarcinoma and Fibroids of the Uterus.

Dr. Pomeroy: The second specimen is from a patient fifty-nine years of age who had passed the menopause without symptoms. She reported to me in November with a history of pain and intermittent discharge, purulent and slightly blood stained, from the vagina, causing irritation. She was a massive, fleshy woman who had an extreme condition of arthritis deformans, high blood pressure and a bad heart. It was a question whether anything ought to be done, but the family being willing, and the woman having some nerve, being German, they were willing to take the chance. It was impossible to do anything through the vagina on account of the fixity of the organs and the beginning atrophic changes in the vagina. The case is interesting because I was able to do only a subtotal hysterectomy. I was able to get all clear of the uterus, but in the removal I left about one inch of the cervix, which I cauterized. The actual cautery would not work, as often happens, and I had to use carbolic acid. The condition proved to be an adenocarcinoma of the fundus with multiple fibroids. The patient is thus far perfectly well and when she came down to see me in December she was free from pain and discharge and extremely well satisfied.

Suspected Adenocarcinoma of the Uterus.

Dr. Pomeroy: The third case was a woman sixty-five years of age, married and parous. I saw her in January when she reported that she had had for two months a foul-smelling, sanious discharge. As far as any one could tell the presumption was that she had an adenocarcinoma. She had an atrophic vagina. She was extremely adverse to operation and only after great urging would sne consent. I did a vaginal hysterectomy with clamps. It was impossible to do a suture operation on account of the narrowness of the vagina. This specimen shows granular areas in the upper part of the body of the uterus which indicates that our presumptive diagnosis was possibly correct, but Dr. Hulst reports that the case is absolutely benign. The patient made a good recovery. The question whether that granular area in the fundus is malignancy, even if the microscope does not prove it, is worthy of consideration.

Dr. Humpstone: The question of the diagnosis of malignancy was brought to my mind by a slide that was submitted to three of the leading pathologists of New York City and none of them agreed as to what it was. The border line where chronic inflammation ends and malignancy commences is the point where many will disagree. I recently removed a mole from a woman which one pathologist diagnosed as a chorioepithelioma, yet another pathologist did not agree with him.

Dr. Judd: Some years ago I read a paper on carcinoma in which I made the statement that in future pathologists would be able to tell from their studies the difference in the degrees of malignancy, and I feel that that time is approaching.

Mammary Cancer.

Dr. W. B. Chase: Mrs. R., aged 80, a patient of Dr. A. H. Brundage, came under my care December 2nd, 1914, suffering from an epithelioma of the right breast which had the characteristic appearance. The ulcer had destroyed the nipple and surrounding structures to the extent of an inch and a quarter in diameter. Her physician had first noticed the growth about two years ago when the patient was in bed suffering from an attack of subacute bronchitis. At the time treatment was begun a small section was taken for purpose of diagnosis. From December 22nd, 1914, to March 5th, she received at intervals about 550 mmg. hours of radium element treatment. There is some remaining induration about the area adjacent to the scar, due in part to an abscess of lactation during her early life. She is now in excellent health. Interest in this case arises from the fact that it was seen and treatment instituted before any metastasis appeared, evidencing the possibility of prompt cure by radium, as the enfeebled condition of the patient involved risk in operative procedure.

Silver Wire Fused to Needle.

Dr. Judd: I wish to show a modification of introducing and holding in position a Baldwin stem pessary. As you know, the button on either side of the cervix has been in use some years. The use of silver wire I have found more satisfactory than either silk or silkworm gut, but the size of the silver wire must be at least number 24, otherwise at the end of four to six weeks erosion and breaking frequently takes place. The modification I show you is simply a fusion of the ends of the silver wire on to the needles used.

Use of the Pulmotor.

Dr. McNamara: I wish to mention a case in which I used a Pulmotor to assist in the resuscitation of a patient on the operating table. A woman of about thirty-seven years of age who was about to be operated upon suddenly stopped breathing. The nurses did artificial respiration and she seemed all right, but again she stopped breathing and this time I put the Pulmotor on and used it for fifty minutes. She came around all right. I thought her condition might have been caused by an over-dose of morphin, but the pupils were not pin point, though this might have been due to the atropin.

Paper: Puerperal Insanity: Dr. Eliot Bishop. Discussion.

Dr. Gibson: Dr. Bishop has covered the subject well from the obstetrical standpoint. Is Puerperal insanity an entity? It is to the obstetrician, but to an alienist it is not as he is dealing with a psychosis, one of the etiological factors of which happens to be obstetrical. The whole question is one of etiology and the prognosis and treatment depend upon the cause. There is almost always an underlying psychopathic or neuropathic taint. The strain of a perfectly normal pregnancy, labor or puerperium may be more than the already handicapped nervous system can stand or she may be exhausted by a tedious labor when we get an exhaustion psychosis; or, again, infection, or intoxication may cause a toxic psychois. At first the condition is one of primary mental confusion which may rapidly clear up or pass into one of the well defined psychoses. If it takes the form of dementia precox the prognosis is bad. If, on the other hand, manic depressive insanity develops the patient will recover from this attack but may develop similar attacks later if subjected to any strain of whatever character. It must be remembered that almost any form of insanity, other than the specific types, may begin at this time. The treatment must be institutional.

Dr. Pool: Dr. Bishop has presented such a mass of fact and opinion that little can profitably be added from my limited experiene with this condition. But I wish to support the testimony of Dr. Gibson in that we have here not a pathological obstetrical entity, but a manifestation of which pregnancy may be the exciting cause. I have been accustomed to divide cases of so called puerpural insanity into three classes: 1. Those which occur in patients of neurotic disposition, in whose antecedent or previous personal history there have been evidences of mental weakness. Such people may be unbalanced by any great physical or mental stress, and we may have both in pregnancy and labor. In these the prognosis as to cure must be guarded. 2. Those which result from pregnancy toxemia (the only class in which pregnancy may be said to be peculiarly the cause of insanity). In this class the mental symptoms may be manifested at any time during pregnancy, sometimes in the early months. I have seen one case in which such symptoms developed in each of her three pregnancies at about the second month. 3. Those caused by septic infection. In the latter two classes the prognosis is favorable if the cause can be removed.

Dr. Hyde: A case of puerperal insanity came under my care a number of years ago; a young girl who was brought to the Long Island College Hospital in the ambulance and was delivered by forceps. She was only a child who had been raped, eleven years of age, without any development of bust and no hair on the pubes or in the axilla. She was eclamptic at the time of entrance, and about a week after her confinement she jumped out of bed with a scream, tore off the bandages and binders and ran around in a wild state. As the mammary glands were not sufficiently developed to secrete any milk the convalescent mothers in the maternity took turns in acting as "wet nurses" for her baby. The condition of mania lasted for two weeks during which time she was under restraint. When she left the hospital she carried in her arms her child, a boy, almost as big as she was. She seemed to have no idea that it was her own child and I believe that she did not realize what had happened. She was seen by an alienist who pronounced the condition puerperal insanity.

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

MAY, 1916

MEDICAL SOCIETY OF THE COUNTY OF KINGS

STATED MEETING, MAY 16, 1916.

The President, Dr. Ralph H. Pomeroy, in the chair.

There were 150 present. The meeting was called to order at 8:50 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

(No quorum of Board of Censors.)

Election of Members.

The following, duly proposed and accepted by the Council, were elected to active membership:

Joseph Blinder, 8669 Bay 24 St.; Univ. & Bell., 1911; proposed by W. L. Folfson; seconded by L. S. Schwartz, Mar. '16.
George Freiman, 703 Grand St.; L. I. C. H., 1914; proposed by W. C. Waggoner; seconded by Membership Committee, Mar. '16.
S. Ingram Müller, 196 Monitor St., L. I. C. H., 1914; proposed by E. E. Cornwall; seconded by Membership Committee, Feb. '16.

Applications for Membership

Applications for membership were received from the following:

Marc V. Abrams, 563 Howard Ave.; L. I. C. H., 1913; proposed by A. M. Judd; seconded by Membership Committee, May '16.
Gilbert A. Ashmun, 1163 Dean St.; L. I. C. H., 1895; proposed by B. C. Collins; seconded by Membership Committee, May '16.
Alec N. Thomson, 835 Park Place; L. I. C. H., 1905; proposed by J. H. Long; seconded by S. J. McNamara, May '16.

By Transfer.

Sylvester R. Leahy, Kings County Hospital; Yale, 1905; transferred by Richmond Co. Med. Soc.

Scientific Session.

Presentation: "Demonstration of the Efficiency of Motion Pictures in Teaching Operative Surgery."

By J. Bentley Squier, M.D.,
Professor of Genito-Urinary Surgery,
N. Y. Post-Graduate Medical School.

Address: "The Pennsylvania Midwife."

By John M. Baldy, M.D.,
President of Bureau of Medical Education and Licensure, Commonwealth of Pennsylvania.

Discussion opened by:
Martha J. Peebles, M.D.
Robert L. Dickinson, M.D.

Meeting adjourned at 10:45 p. m.

Lewis P. Addonis,
Associate Secretary.

The Committee on Public Health of the Medical Society of the County of Kings submits the following report:

At the time of the appointment of the Committee the President of the Society requested that this Committee take charge of the program of the February, 1916, meeting of the Society. Your Committee submitted the following program:

TOPIC

The Department of Health, the Responsible Representative of the Medical Profession.

(*a*) "The Responsibilities of the Department of Health of the City of New York."
By Haven Emerson, M.D.,
Commissioner of Health.

(*b*) "Attacking the Venereal Peril."
By Alec Nicol Thomson, M.D.

(*c*) "Adult Hygiene."
By Louis I. Harris, M.D.,
Chief of Division of Industrial Hygiene in the Department of Health.

(*d*) "The Patient and the Physician: Does the Department of Health Trespass on Their Individual Rights?"
By Thurston H. Dexter, M.D.,
Chairman, Committee on Public Health.

(*e*) Discussion. Opened by Louis C. Ager, M.D., Member of the Milk Commission.

Invitations were sent to every practitioner in Brooklyin.

This symposium on public health problems and the spirit of cooperation engendered by conferences with Commissioner Emerson and his associates in the Department of Health in the arranging for this meeting have developed, your Committee feels, a wholesome and helpful relation between the Department and the County Society. It is the desire of the Committee that this spirit of cooperation extend so as to include the medical fraternity at large, irrespective of Society affiliations.

In April, 1916, your Committee received notice from Commissioner Emerson that his Department was submitting to various bodies for comment some proposed rules for the regulation and supervision of the manufacture and sale of ice cream and butter. In this instance the Committee considered the proposed sanitary regulations and, in conference with Dr. Alfred Bell, of the Milk Commission, decided to commend to the Commissioner the letter already sent by the Milk Commission, which Commission had gone into the matter very thoroughly, reaching conclusions that undoubtedly will be reported by that Commission tonight.

On May 3, 1916, Commissioner Emerson held a meeting to express disapproval of the Simpson bill amending the Public Service Commission law in a way that deprives the Boards of Health of the State of New York of the power to prevent overcrowding of passenger cars in the cities of this state. On invitation, Dr. Shipley and the Chairman of your Committee attended this meeting and, with the representatives of other bodies interested in public health, protested against this proposed curtailment of recognized functions of the Department of Health. The Chairman of your Committee and possibly other members expect to be present in Albany when the Governor has a hearing on this bill, and they would welcome any instructions from the County Society or suggestions from the Committee on Legislation.

Your Committee on Public Health is taking up with the Health Department a suggestion emanating from the Committee that some arrangement be made whereby private physicians cooperating with the Department in examining school children shall indicate on the child's card whether the physician intends to direct the correction of the defects reported by him, or whether he desires the Department to supervise the correction. The Committee hopes to report at a later date something definitely constructive along these lines.

Your Committee is in touch and cooperation with the Public Health Committee of the State Society and desires to call attention to the fact that at Saratoga Springs, on May 16th, 1916, the latter Committee will present papers at the annual meeting of the State Society dealing with matters of Public Health, Hygiene and Sanitation.

Respectfully submitted,
THURSTON H. DEXTER,
Chairman, Committee on Public Health,
Medical Society of the County of Kings.
May 16th, 1916.

"DUNEDAY"

JUNE TWENTY-FOURTH

The Spring Meeting of the Associated Physicians of Long Island will be held at Westhampton on Saturday, June 24th. By early reply from a sufficient number we can secure a **Special Train** at reduced rates from Brooklyn. This train will leave Flatbush Avenue at about 10:30 a. m. and return at our convenience. To those who subscribe, a ticket will be sent giving the schedule of the train and its various stops. A luncheon will be served on the train.

On arrival, a short business meeting will be held to elect new members, the membership now totalling a thousand; reports of committees will be received and, of intense interest to us all at this time, the plans of the Committee on Medical Preparedness. Following the meeting, a great variety of entertainment has been provided. The Westhampton Country Club has extended to us the privileges of the club for the day, and those desiring to play golf or tennis are advised to bring along their apparatus. The majority of the members will probably prefer to gather on the dunes and enjoy the great Salt Water Swimming Pool which has just been completed.

Dinner will be served in the grove adjoining the Howell House, long famous for its excellent **cuisine.**

Be prepared!

1. Send in your card and check now.
2. Pay for what you want, no more.
3. Do not show up for dinner without a ticket. Secure it in advance: unpreparedness has spoiled many a party.
4. If you find that you cannot go, give your ticket to a medical brother, or send it to the train and we will sell it to someone anxious to get aboard at the last minute.

Guest tickets may be secured on application to Dr. Frederick C. Holden, 198 Lincoln Place, Brooklyn.

Dudley D. Roberts, President,
James Cole Hancock, Secretary.

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"THE RESPONSIBILITIES OF THE DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK."

Haven Emerson, M. D.,

THE responsibilities may be properly classed under three heads. The Department of Health is responsible under the law for the enforcement of the Sanitary Code. .The Sanitary Code is a body of sanitary law passed by the Board of Health in the last fifty years. It is the substance of the best that the medical profession has been able to produce for the community control of disease. The Sanitary Code, therefore, is a body of law which the Department of Health must enforce in the same way that the Police Department must enforce the penal law of the City and the ordinances of the City of New York.

The second responsibility is the responsibility to the city to see that the Sanitary Code is enforced in the spirit of a medical adviser, and not in the spirit of a police officer. The responsibility of the Department is to spread information of the means of preventing disease so widely throughout the community that enforcement, as by the Courts, will be necessary only in rare instances.

The third responsibility of the Department is the responsibility to the medical profession to see that they get closer and more permanently amalgamated with the Department as a necessary part of the organization for the prevention of disease, and that they don't feel as if the Department's business was to ruin their private income.

Now, to go into this thing a little more in detail; I think that it is worth while to indicate that the Sanitary Code is not made by the Department of Health, but by the Board of Health, which has one representative from the Department of Health in the person of the Commissioner, the Commissioner of Police and the Health Officer of the Port having the other two votes. This is a wise arrangement, as any body of people interested in one subject may become myopic with regard to their own particular subject.

So far as the validity of the Sanitary Code goes I would call your attention to the fact that the Courts have not, so far, reversed the Board of Health in any important particular. In other words, the regulations and the sections of the Sanitary Code which the Department of Health is obliged to enforce have been upheld by the Courts to be a reasonable exercise of the power which is put into their hands for the protection of the community against itself. In the passing of such regulations, the Department of Health has given the Board of Health the benefit of a particular kind of co-operation from different groups in the community who represent, in the first place, the medical profession, in the second place, the laboratory scientists of the different institutions in the city, and, in the third place, groups of citizens who are likely to come or who, by the nature of their occupation, do come under the sanitary regulations of the Department. They are known as the Advisory Council of the Department of Health, about 150 in all, and they represent different groups in the community who have an interest in the character of the regulations which the Department of Health carries out after those regulations have been issued by the Board of Health.

There is no way in which we can escape those responsibilities because we are held by the city administration and the state administration to the enforcement of the state laws, whether they are passed by the State Legislature, or are regulations of the State Industrial Commission, or are issued by the State Health Department, or whether they are the enactments of the Board of Health of the city.

In almost every instance regulation costs somebody some money. It has cost the milk people money to improve their grades of milk. It has cost the chicken slaughter house owner money to put his premises in such condition as to render it safe and decent to operate in the various parts of the city. It has cost employers in industries a good deal of money to provide proper equipment in their establishments to avoid industrial injuries. Dr. Harris will tell you more about this when he takes up his part of the program.

The responsibilities put upon private individuals result from scientific control of the causation of disease or the means of its transmission. The community has been benefited by relieving citizens of the necessity of fumigation without any increase of the incidence or spread of infectious diseases as far as we can see. The periods of quarantine have been shortened. The responsibilities of private practitioner to his own patients have been increased and he has been relieved of interference by the Department.

In order to start any action by the Department with regard to the prevention of disease we must, in the last analysis, depend exclusively upon the original report and statement of the physicians in private practice or in hospitals.

When such a thing occurs as occurred last summer it makes us feel that any action, however arbitrary, may be excusable by the Department since death and disease have resulted from absolute neglect of the fundamental precaution which should be taken by the physician in charge. Let me cite a case in point. There were a number of cases of typhoid fever being reported from Brooklyn. Among them we had two recorded from the same milk supply. Now, we do not feel that we have a right to suddenly stop a man's entire income by excluding his milk because we have two cases of typhoid fever among his patrons in a vicinity where there are a number of cases among patrons of other companies. At the time of this report there were five cases of typhoid fever in one of the Brooklyn hospitals which were known to the people in that hospital. They came from that same milk supply and if we had been notified of those cases when the physician in charge knew of them we would have been in position to cut off that milk supply earlier and might have saved forty to fifty cases that developed because of exposure to and use of that milk which would have been unavailable to them, by exclusion of the supply if we had received reports at the time when they should have been sent to us. When we get a case of that kind we feel we have a perfect right to be more vigorous or more persistent, as you would say, in requiring compliance with the Department orders. We are asked: "Can a physician be at the beck and call of the Department of Health to give immediate notice of such things." The attitude of the hospital physicians was this: "The physician was uncertain in his examination. He was uncertain as to whether the diagnosis was correct. He hadn't got his blood culture. He hadn't got his stool culture." But he had found the enlarged spleen and the rose spots at that time, and he had the temperature and the Widal as well, but, in order to protect himself against criticism, he falls back on the fact that he had not proved the disease bacteriologically, and in the meantime the disease was spreading because he hadn't taken the little pains to notify the Department of Health that these cases had developed and were in his hands. These cases were all from the same milk supply as the two others which I have already spoken of. This sort of thing has not occurred in Brooklyn alone. There were 100 cases in that group before the cutting off of the milk supply brought an end to the outbreak. On taking the matter up with the superintendent of the hospital he said, "I am at the mercy of the visiting physicians and the staff. They did not report those five cases." Now, the staff know the regulations because they were informed of them when they entered the hospital service. The visiting physicians know the regulations, but when they get in a hospital it seems to come over them that they are doing a great service by giving free treatment and should not be hampered by the requirements of the Department of Health and they forget to do the things which are required of them by law.

The entire structure of the prevention of disease as at present operated in the City of New York depends upon the accuracy and promptness of the report of physicians of diseases which may be preventable. We cannot assist any woman in caring for her baby until we get the birth certificate. They are practically all reported nowadays. That is a matter of long training and many prosecutions and much distress to physicians. In the State of Indiana the physician's bill is invalid in law unless the birth is reported in twenty-four hours and patients don't have to pay the bill if the certificate hasn't been sent in to the Department of Health. And the people know this. In some cases physicians have said the parents didn't decide upon a name until it was too late. Now, that is no excuse. You can file the name at any time afterwards. It is partly by complying with such regulations that the death rate among little babies is cut down materially. We depend in the entire campaign for the reduction of infant mortality on the immediate reporting of births. We would like to get a report of every pregnant mother who is known to physicians so that there may be put into her hands such material as will help her in the hygiene of her pregnancy.

The Bureau of Preventable Diseases considers it now as much a responsibility of the city to prevent occupational diseases as to check infectious diseases and I see no essential difference between the duty of the city to prevent diseases due to environment or resulting from occupation and the responsibility for communicable diseases which may be prevented by cutting off the means of communication or the source of infection.

The responsibility to the people of the city is expressed by our educational propaganda and I think that you will admit that the material that is used for teaching purposes by the Department is conservative and in the interests of the profession. The more we teach that public health and private health depends upon physical examinations the more opportunities we are putting in the hands of the profession for practice. I wonder how many of you feel it would be unsuitable to advise your patients to come to you periodically for examination. The dentist does it and with obvious benefit to his patients. Why do you not ask your patients to come back when they are healthy so that you can see what they are like in health and not merely when they are sick and suffering.

When we took up the question of the examination of food handlers it should be realized that the profession has had given to it the opportunity of making some 40,000 or 50,000 examinations that otherwise would not have been required and if the profession had taken that as a new privilege and responsibility it would have been a splendid opportunity for them. It has been a misfortune that the Department of Health has had to recognize those physicians who are not conscientious and honest enough to comply in a proper way with the provisions of this particular law. When a man sends in a report to the effect that he has made forty examinations in an afternoon we know he is a fraud and it is perfectly proper for us to protect cooks and food handlers against that form of professional chicanery.

I want to indicate the campaign we have planned for and expect to put into force in the near future in the Borough of Queens. We have taken this opportunity to extend our health district principles so that Queens may have the benefit of intensive health control without too great a strain upon our own organization. In that borough we have already sent a letter to a number of physicians who have notified us of all their cases of communicable disease, who have complied with every regulation of the Department and who have not been delinquent in the reporting of births or deaths and cases of tuberculosis, syphilis and other reportable diseases. In other words, we have sent it to a group of physicians who have shown their spirit of cooperation. If we ask physicians to do that sort of thing and free them from the supervision, classification and follow-up which we have to use in the city at large in order to obtain uniform results, we are practically turning over to the profession work which it ought to assume for itself. If the physician is so little interested in his science and in his art that he won't take the pains of preventing the second, the third and the fourth case by taking proper precautions when he comes across the first case of a communicable disease, we cannot trust him to become an auxiliary of the Department of Health. The result of this you will say is to build up a special list of physicians. True! but I think that when these men have acted in the conscientious way in which I have detailed to you, they are worthy of special consideration. Shouldn't we give up some of our supervision for the sake of allowing physicians to carry on untrammeled their professional relation with their patients? We should try it and I think we shall find that these physicians will be the leaders of the profession in their districts as to occupational and preventable diseases. It will be a matter of pride to them to show the lowest mortality and morbidity rate and to have it known that they are so skillful in medicine that they can detect the early signs of disease and prevent it. If the physicians can become imbued with the idea of preventing preventable disease I can easily see that the burden on the community of an expensive health plant will be diminished.

I want to say, as I think I did a year ago, that if there are any points of friction between the profession and the Department of Health we stand ready to take them up with the profession and shall be glad of the opportunity of doing so. I may say that we ought to know where we are causing trouble and causing friction. We wish you would create a Health Committee for your County Society which will speak with information and directly to the Department of Health in matters of any improper relations or improper results which you think follow the actions of the Department. Our responsibility to the profession is not met until we can feel that we are considered to be fellow-workers with the profession and until the profession feels that if we have done a thing against their interests, we are ready to see, to listen and to change our position.

Dr. Haven Emerson, in closing the discussion, said:

"The employees of the Department of Health are selected from Civil Service lists. It is quite impossible to allow any professional group or private society to share in the selection of the Department officials.

Various ones of us think at times that we can select from our private acquaintances people superior to those presented to us on the eligible lists certified to by the Civil Service Commission. Many of these appointments are being absolutely freed from political interference as a result of Civil Service control and it is necessary to adhere strictly to the regulations of the Civil Service Commission, and I don't see in what way the organized medical profession can share except to bring to the attention of the Civil Service Commission the standards which examinations should set. That is the only way in which they can share. They cannot share in the selection of the Department of Health officials.

"As to the treatment of diseases, I do not think that there is any treatment of disease by the Department except tuberculosis and trachoma. The infants' milk stations are turning to be centers for the distribution of information through nurses and we should be glad to give up the milk stations just as far as possible. It is easier to get at least twenty people in one room at the same time than to go to twenty different rooms in different parts of the city, so we use this method and in that way we teach people and we use the milk as a bait to bring them there. We do not treat sick babies at the milk stations.

"It is true that you cannot, by paying a salary of $1,200.00 a year, create a pediatrician, but you don't need a pediatrician to keep a little baby well if you have begun early enough to educate the mother in the principles of baby hygiene. Of course, there are people who will loaf on their jobs and who are interested in something else, and, as Dr. Harris says, some of them are interested more in the pay day than in the work day.

"I think you owe it to Dr. Thomson to see that he is supported in the work which he is doing. I don't know anything that is more admirable, more reasonably organized and more effective than the kind of work being done at that clinic. It should be a model all over the country. It is a model for the city in which it is done. It is acting as an educational agency. The sanitary inspectors are your assistants in this. The doctor should be assisted wherever possible to trace these cases. Last fourth and fifth of July we went from Far Rockaway to New Dorp, S. I., taking in all the bathing establishments along the line. It took two days to go through the entire list. We had some screw drivers with us and I think we could fill a good many bushel baskets with advertising signs of venereal quacks which we removed everywhere from the toilet accommodations of these bathing establishments. You may be interested to know (perhaps some of you saw it in the Weekly Bulletin) that the advertisements of the quacks in the Evening Telegram have been taken out and that they will no more carry those advertisements, so the expense of $750.00 a year which the city has borne to put in its competitive advertisements has brought good results. That money will now be applied to the foreign newspapers where these advertisements still persist. In other words, the last large English city daily which carried this class of matter, has seen fit to cut out such advertisements of so-called venereal specialists.

THE TREATMENT OF SYPHILIS, IN THE TERTIARY AND LATE STAGES.*

James Macfarlane Winfield, M.D.,

Brooklyn-New York.

IN spite of our increased knowledge of the cause, diagnosis and treatment of syphilis, the management of the third and late stages still present many perplexing problems.

We know now, as we have known for many years, that the occurrence and severity of the tertiary symptoms are in a great measure dependent upon the kind and amount of treatment the patient received while suffering from the earlier stages of the disease.

Since the introduction of salvarsan as a therapeutic agent, the improved methods of diagnosis and our ability to check up the results of treatment, we believe that syphilis in any stage can be cured, providing the treatment is promptly begun, energetically pushed and intelligently administered.

Furthermore we believe that thorough treatment at the beginning of the attack may so modify the character of the disease, that although a permanent serological cure cannot always be obtained the tertiary manifestations may never appear in any tissue or organ, and if they do the symptoms may be fairly insignificant.

Although experience has taught that syphilis may, in rare instances, be self limited, and that the tertiary symptoms are sometimes slight, the careful clinician never allows himself to be lulled by false hopes, because he knows that the victim of syphilis may always be in danger of tertiary and late outbreaks; even though the disease has remained dormant for years, it may be lighted up by traumatism, worry, shock or excesses; he also knows that the tertiary symptoms do not readily yield to treatment, even when it has been most scientifically administered, and that in spite of all, the unfortunate sufferer may be subjected to deformities, chronic invalidism, insanity and death.

To reiterate, all who know the insidious and protean character of syphilis should insist upon the thorough treatment of the disease during its early stages, for if the specific organism can be prevented from becoming segregated in some poorly vascularized tissue or organ, much has been done to give the patient a clean bill of health for the future.

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* This paper is an abstract of one prepared, but not read, for the symposium on syphilis, at the one hundred and ninth annual meeting of the Medical Society of the State of New York.

The custom of arbitrarily dividing syphilis into three stages, primary, secondary and tertiary, served a useful purpose when treatment was the only guide to the progress of the malady, but now with the improved methods of diagnosis, and the ability to watch the occult progress of the disease by the serological tests, we realize that there is no division possible; for when the lues is inoculated into the system, the various protean lesions and symptoms are only the visible and appreciable manifestations of the fact that the subject is the victim of syphilis.

We know now that certain organs and tissues, formerly supposed to be only affected in the tertiary or late stages of the disease, are frequently involved even before the cutaneous rosoela has disappeared, spinal fluid changes have been observed at the very beginning of the secondary eruption, and gummatous formations and structural changes, the so-called tertiary lesions, have been noted within a few months after the initial sore.

It should be strongly impressed upon the minds of the luetic that his chances of escape from the late severe manifestations of the disease depends largely upon his strict observance of hygienic rules, he should endeavor to maintain a high standard of health, he should live a clean, orderly life, avoiding excesses of any sort, especially alcoholic, he should also carefully guard against trauma, but if in spite of intelligent treatment in the past and correct living in the present, the latent presence of the disease manifests itself in some suspicious symptom, the first duty of the physician is to carefully examine the workings of every organ of the body, especially the nervous, vascular and urinary systems, for in our eagerness to subdue and cure the specific disease we are apt to forget that the general condition of the patient needs as much attention as do the luetic symptoms.

It should also be borne in mind that probably there are different strains or different stages of development of the spirochaete that have a special selective action upon certain tissues or structures; the particular strain that attacks the skin probably does not have a predilection for the brain or spinal cord. This seems to be borne out clinically, for one seldom if ever sees a tabetic or paretic with tertiary cutaneous manifestations.

Before the discovery of salvarsan the treatment of tertiary and late syphilis mainly consisted of giving mixed treatment, mercury and the iodide of potassium, and frequently these drugs were given by the mouth, a method that is uncertain in its action upon the disease, and one that invariably caused gastro-intestinal disturbance.

Iron was seldom resorted to and the iodides were generally given in too large doses.

A great advance in treatment was made when syphilographers demonstrated that if mercury was given by inunctions or injected intramuscularly, the action of the drug was more certain, the size of dose could be more accurately regulated and the dangers of mercurialism could be avoided.

This was the accepted mode of treatment at the advent of salvarsan. The discovery and application of this drug in the treatment of syphilis has changed the method and now we appreciate the fact that syphilis in any stage can be absolutely cured, and it is the consensus of opinion that the intermittent, intensive method brings about the best results serologically as well as clinically.

By intensive, intermittent treatment is meant the administration of several doses of salvarsan, given at close intervals, followed by an intensive course of mercury either by intramuscular injections of a soluble or insoluble salt, or, if one prefers, the mercury can be administered by inunctions; in tertiary and late syphilis the iodides and ferruginous tonics are generally indicated.

The number of doses of salvarsan depends upon the reaction of the blood and spinal fluid; in some cases a negative reaction can be procured with only three injections, while in others it may remain positive after ten or more full doses have been given.

After the salvarsan course the mercurial and iodide treatment is instituted, which is continued for at least three months. If at the end of this time the disease does not seem to be under control, as judged by clinical evidence and serological tests, the whole process is repeated.

Before starting treatment a careful examination of the urine should be made, and as a matter of precaution the urine should be examined after each administration of salvarsan, and also at frequent intervals during the mercurial course.

The blood and spinal fluid Wassermann reaction should be noted at least every fortnight during treatment, and monthly or bi-monthly after treatment has been discontinued. If after four or six months from the time the intensive treatment was stopped, the serological reaction is still negative and there are no suspicious symptoms, one can relax vigilance, but if the Wassermann is still positive or doubtful the whole process must be repeated, until the requisite result is obtained.

If possible the patient should be kept under observation and his blood examined for a year or more after he is pronounced cured.

Before preparing this paper I took the liberty of asking the following questions of a hundred physicians who had had large experience in the treatment of syphilis. In this group were dermatologists, neurologists and genito-urinary specialists. I wish to take this occasion to thank the gentlemen for their promptness, care and willingness in replying.

1. Is the intermittent, intensive the best method in tertiary and late syphilis?
2. How long should such treatment be continued?
3. If the disease has progressed to this stage, is it possible to procure an absolute serological cure?
4. If, so, what is the percentage?

About 80 per cent agreed that the intensive, intermittent treatment as outlined above was the best method of combatting the tertiary manifestations. Naturally there were various opinions regarding the frequency of administration and the number of doses of salvarsan and the duration of the mercury and iodide medication.

Several were of the opinion that the best results could be secured, especially if the tertiary symptoms were cutaneous, from the old-fashioned mixed treatment, without salvarsan; all agreed that some stimulating mercurial application to the skin lesions would hasten the dermatological cure.

Many considered that the iodides were absolutely necessary when the vascular, hepatic or nervous systems were involved; some were doubtful of any great success in cebro-spinal lues, from any method of treatment, even the Swift-Ellis or Ogilvie methods, unless the diagnosis had been made early.

In answering the second question, opinions varied from three months to the rest of the patient's life; the majority, however, thought that treatment would have to be resumed from time to time, for under the most skillful management tertiary symptoms were apt to recur and returning positive blood and spinal fluid reactions would show that the disease had not been conquered.

There seemed to be considerable hesitancy in giving an opinion regarding the third question; some even doubted if the serological test was of any great value in tertiary syphilis.

Thirty-five per cent doubted if medication ever had any very decided influence in producing a negative Wassermann, and if the blood and spinal fluid did become negative it rarely remained so for any length of time after all treatment had been discontinued, although the clinical symptoms might never return.

Many thought that the time was still too short to state positively what would be the ultimate outcome of the modern method of treatment in any of the stages of the disease.

Twenty per cent, mostly genito-urinary specialists, put themselves frankly upon record as believing that proper treatment in the third stage could so influence the disease that the blood and spinal fluid would be rendered absolutely and permanently negative.

Naturally from the tenor of the replies to the first three questions, the answer to the fourth, what percentage, varied all the way from nothing to 80 per cent of serological cures, although practically all considered the question one that could not be answered dogmatically.

Studying these replies emphasizes the fact that there is still a great deal to learn about syphilis, and that if the profession continues to give the subject as enthusiastic study in the future as has been given to it during the past few years, it is probable that the disease will ultimately become conquerable.

In concluding, the following points seem worthy of emphasis:

First: In order to prevent disastrous and troublesome tertiary and late complications, the disease should be persistently treated at its inception.

Second: General hygienic rules are as essential as is the specific treatment.

Third: The best results are obtained when the treatment is intensively administered.

Fourth: A serological cure is possible in any stage of the disease.

Fifth: In tertiary and late syphilis a negative serum reaction may, and often does become positive after active treatment has been discontinued, although all clinical symptoms may never recur, and consequently a negative or positive reaction in the late stages of the disease may be of little or no value, either for diagnostic purposes or as a guide to medication.

And finally, although not exactly germane to the subject, I wish to add my protest against the attitude taken in regard to syphilis in its earlier stages, by the profession in general and the hospitals in particular. A careful analysis of the chronic patients in the general hospitals and insane asylums will reveal the fact that many of the diseases these patients are suffering from are of luetic origin, and might have been prevented if the primary disease had been carefully treated, under hospital care in the beginning.

We who see syphilis in all of its hideous phases earnestly hope and pray that the early syphilitic may receive as much consideration as those who are suffering from any other disease.

The profession and hospital authorities should remember that syphilis is not always of venereal origin, and that the unfortunate victim should not be made a hospital pariah.

SURGICAL CLINICS
AND
CLINICAL REPORTS

May 11, 12 and 13, 1916

IN HONOR OF
DR. LEWIS STEPHEN PILCHER
AND TO COMMEMORATE HIS
FIFTIETH MEDICAL ANNIVERSARY

SURGICAL CLINICS, U. S. NAVAL HOSPITAL, BROOKLYN, NEW YORK.

Philip Leach, M.D., Medical Director, U. S. N.
C. M. Oman, M.D., Executive Surgeon, U. S. N.
E. P. Halton, M.D., Passed Assistant Surgeon, U. S. N.
H. F. Lawrence, M.D., Passed Assistant Surgeon, U. S. N.

DISLOCATION OF INTRA-ARTICULAR CARTILAGE OF KNEE-JOINT.

N.......... C.S., Ordinary Seaman; age 19; white.

This man was admitted from the U.S.S. Nevada, April 15, 1916, with a diagnosis of dislocation of intra-articular cartilage of joint (right knee).

History.—While exercising in the gymnasium in November, 1915, he fell from parallel bars and struck on the inner right knee. He states that he got up and walked immediately but that the knee felt sore and painful. It was not "locked." He was put to bed at this time and remained in bed for three weeks, receiving the usual hot applications and liniments. At the end of this time he felt much relieved and states that the pain and stiffness had practically disappeared. However, on resuming his duties he noticed that this knee was distinctly troublesome and that he continually had a sensation as to the uncertainty of the manner in which this joint was going to act. Eight times since November, 1915, the joint has become "locked" in a semi-flexed position, but he has always been able to straighten it out himself by manipulation. The last time "locking" occurred was one week ago.

During the past two weeks he has occasionally complained of pain and stiffness in the joint.

Physical Examination.—Examination shows very little difference in the contour of the two knee joints; and there are no signs of effusion. There is distinct tenderness over the position of the right internal cartilage. X-ray examination is negative.

Operation by Surgeon C. M. Oman, U.S. Navy.—Ether anesthesia. A 3″ longitudinal incision is made over internal cartilage: and what hemorrhage there is is controlled by ligatures. Capsule of joint opened and immediately the internal cartilage is seen detached from its normal position and hanging in joint, detached at both ends. Care is taken to use instruments alone in the joint, not touching with fingers. The cartilage is cut at each end and removed. Knee joint flexed and extended to observe condition and to see that no loose bodies are present. Capsule closed accurately with fine catgut and a curved needle. External wound closed by interrupted silk-worm gut sutures. Dry sterile dressing applied and joint supported by a long posterior splint.

The splint will remain on for three weeks. Then the patient will be allowed to walk on crutches for two weeks, and at the end of five weeks from the time of operation he will be allowed to bear his weight gradually on this leg.

Comments by Operating Surgeon.—The above is a typical history of many cases which are being treated for "sprains," "rheumatism," etc., which really are dislocated cartilages. It is a well-known fact that the internal cartilage is usually the one dislocated, due to the anatomical arrangement of the joint.

It has been very rare in my experience to feel any projection on the surface and never have I been able to fix a cartilage before operating, as is mentioned in some works on surgery.

Of course it is needless to say that strict asepsis should be followed. We have operated on a number of these cases and have never seen any ill results. In fact, all the patients have resumed their active duty on board of seagoing vessels without any discomfort. I have been able to follow up a number of my operations on this condition for a period of six or seven years, and all the results have been satisfactory.

It seems to me that a great many surgeons are a little shy in opening the knee joint for this disabling condition; they seem to retain the extreme fear and dread which were formerly felt when the knee joint was operated upon.

ADENOMA OF MALE BREAST.

S............, S., Machinist's Mate 2nd class; age 23; white.

This man was admitted from the U.S.S. Ontario, April 20, 1916, with a diagnosis of adenoma, left breast.

History.—In 1912 he first noticed a swelling in the left breast which seemed to him as an enlargement of the whole breast. The next day the swelling had disappeared. Six months later the swelling again appeared, and has been present ever since. At times, after working hard, the breast became red and painful. Usually it caused him only slight discomfort, and this was more or less imaginary. There never has been any discharge from the nipple and no excoriation about the breast.

Physical Examination.—Physical examination shows a firm movable mass, regular in outline and rather firm in consistency, about the size of an orange and not adherent to the skin or muscles. No secretion can be expressed from the nipple. It is tender on manipulation. The diagnosis of adeno-fibroma is made.

Operation by Surgeon C. M. Oman, U.S. Navy.—Ether anesthesia. The whole breast was amputated by the usual incisions. Very little hemorrhage. Wound closed by interrupted silk worm gut and arm bandaged to side after dressings were applied.

Comments.—This specimen will be examined microscopically.

VARICOCELE.

S............, R. T., Chief Machinist's Mate; age 28; white.

This man was admitted from the U.S.S. Winslow, April 29, 1916, with a diagnosis of varicocele, left.

History.—He gives the usual signs and symptoms of a moderate varicocele and recently it has caused him considerable pain and the usual mental worry.

Physical Examination.—Examination shows moderately enlarged veins in left scrotum.

Operation by Surgeon C. M. Oman, U.S. Navy.—Ether anesthesia. High operation. A 2″ incision made over external ring; testicle dislocated into wound; the vas, a couple of small veins, and the cremasteric muscle separated; veins ligated and transfixed; about 2½″ removed and ends brought together by a double ligature of catgut. The tunica vaginalis cut with scissors and everted. The testical returned to scrotum and the wound closed by deep fascial catgut sutures, and three superficial silk worm gut sutures. Dry dressings and support of testicle. Patient will be in bed for one week.

Comments by Operating Surgeon.—We have found that this method of doing this operation gives very satisfactory results. The dislocation of the testicle permits one to get at the diseased veins, and the cutting of the tunica vaginalis not only does away with swelling of the testicle after the operation but absolutely prevents the forming of a hydrocele some weeks or months later. It is a very quick operation, usually taking about seven to eight minutes.

DEPRESSED SCAR, FOLLOWING MAXILLARY SINUS.

B............, J. H., Chief Electrician; age 39; white.

This man was admitted from the U.S.S. Florida, October 15, 1915, with a diagnosis of depressed maxilliary scar.

History.—He has had a chronic sinus of the right lower jaw about seven years. During the past few months he has had the wound opened and the lower maxilla scraped. No dead bone found. The roots of two teeth had been removed. The sinus ceased discharging some weeks ago and the external wound is entirely healed, leaving a depressed scar attached to the jaw bone.

Operation by Passed Assistant Surgeon H. F. Lawrence, U.S. Navy.—Novocaine anesthesia. A 2.5 cm. (1 inch) linear incision made down to jaw bone. All the tissues were freely separated and the wound closed by three silk-worm gut sutures in such a way as to lift up the depressed portion of the scar and leave a wound in which the scar should be level with the adjacent surface.

DEFLECTED NASAL SEPTUM.

CASE I. S........., G. H., Chief Carpenter's Mate; age 30; white.

This man was admitted from the U.S.S. Prometheus, April 8, 1916, with a diagnosis of deflected nasal septum.

History.—He has complained of nasal obstruction for some years, and has had the usual disagreeable symptoms on catching a fresh cold.

Physical Examination.—A marked deflection of septum to the right is discovered.

Operation by Passed Assistant Surgeon E. P. Halton, U.S. Navy, Retired.—Cocaine anesthesia. Submucus resection of septum performed.

CASE II. W........., H. C., Seaman; age 22; white.

This man was admitted from the U.S.S. Wyoming, May 5, 1916, with a diagnosis of deflected nasal septum.

History.—He has complained of the usual symptoms resulting from obstruction of the nasal cavities.

Physical Examination.—There was a marked deflection of the nasal septum with an old chronic ulceration on the septum.

Operation by Passed Assistant Surgeon E. P. Halton, U.S. Navy, Retired.—Cocaine anesthesia. Submucus resection of septum performed.

DOUBLE INGUINAL HERNIA.

L........., M. G., Gunner's Mate 2d class; age 24; white.

This man was admitted from the U.S.S. Arkansas, May 10, 1916, with a diagnosis of a left inguinal hernia.

History.—Patient had been operated on for a left inguinal hernia in August, 1913. One month ago he noticed a swelling at the site of the old scar.

Physical Examination.—Examination reveals a small reducible indirect left hernia at the site of the previous operation. Examination also shows a small indirect reducible right inguinal hernia. He has not been aware of the presence of this hernia.

Operation by Surgeon C. M. Oman, U.S. Navy.—Ether anesthesia. A Bassini operation performed on each side with the Kocher modification. A small sack containing omentum present on left side and a small sack found on right side.

Comments by Operating Surgeon.—This patient will be kept in bed for two weeks.

CHRONIC BURSITIS OF TOE.

C........., J. D., Bugler; age 30; white.

This man was admitted from the U.S.S. Maine, May 2, 1916, with a diagnosis of bursitis, chronic, metatarsophalangeal joint, left foot.

History.—For the past year the patient has been troubled with pain, redness and swelling over this region. The pain becomes much worse on standing for any length of time or upon taking the usual "hike."

Physical Examination.—Shows swelling, redness and tenderness over the inner side of joint. Practically no deformity of joint.

Operation by Passed Assistant Surgeon H. F. Lawrence, U.S. Navy.—Ether anesthesia. Excision of bursa.

HEMORRHOIDS.

CASE I. W........., F. J., Gunner's Mate 3rd class; age 26; white.

This man was admitted from the U.S.S. Wyoming, May 9, 1916, with a diagnosis of hemorrhoids.

History.—Five years ago this patient was operated upon for a similar condition. One week ago the hemorrhoids again became prominent. There is some protrusion and they bleed.

Physical Examination.—Shows two large bleeding internal hemorrhoids that cannot be replaced.

Operation by Passed Assistant Surgeon H. F. Lawrence, U.S. Navy.—Ether anesthesia. Sphincter dilated for 5 minutes. Clamp and cautery applied to two sections. One mass ligated by catgut ligature and removed by scissors. Iodoform and opium suppositories.

Comment by Operating Surgeon.—Bowels will be kept bound up for four days. Patient will be allowed up after one week and advised as to regularity to prevent future trouble.

CASE II.—S........., C. G., Boatswain's Mate 2nd class; age 26; white.

This man was admitted from the U.S.S. Utah, May 9, 1916, with a diagnosis of hemorrhoids.

History.—About one week ago patient first noticed small bleeding, protruding mass.

Physical Examination.—Shows a small external pile and two small internal piles.

Operation by Surgeon C. M. Oman, U.S. Navy.—Ether anesthesia. Sphincter dilated for 5 minutes. Clamp and cautery applied to two sections.

ACUTE APPENDICITIS.

H........., F. A., Ordinary Seaman; age 20; white.

This man was admitted from the U.S.S. Wyoming today, with a diagnosis of acute appendicitis.

History.—Gives a history of having had acute appendicitis two months ago. Last night he was taken with pain in right iliac region, vomiting and fever.

Physical Examination.—Temperature 98.8, respiration 20, leucocytes 30,000, polymorpho-nuclears 90 per cent, urine normal. There is tenderness and rigidity.

Operation by Surgeon C. M. Oman, U.S. Navy.—Ether anesthesia. Gridiron incision, below and external to classical McBurney incision. There is a marked increase in peritoneal fluid. Appendix acutely inflammed, large, and surrounded by plastic lymph. Ligated. Stump cauterized and returned to abdominal cavity. Wound closed in usual manner.

Comment by Operating Surgeon.—This man will be kept in bed for ten days.

DEVIATION OF NASAL SEPTUM.

K........., S. G., Seaman; age 21; white.

This man was admitted from the U.S.S. Wyoming, May 2, 1916, with a diagnosis of irregular deviation of nasal septum.

History.—He complains of the usual obstructive symptoms and mouth breathing at night.

Examination.—Shows a markedly deviated septum to left.

Operation by Passed Assistant Surgeon E. P. Halton, U.S. Navy, Retired.—Cocaine anesthesia. Submucus resection of septum performed.

HYPERTROPHIED TONSILS AND ADENOIDS.

M........., N., Female; age 9½; white.

This child is a daughter of a Marine Officer. Diagnosis: Hypertrophy of tonsils and adenoids.

Operation by Passed Assistant Surgeon E. P. Halton, U. S. Navy, Retired.—Ether anesthesia. Tonsils removed by dissection and cold wire snare. Curettment of masses of adenoids.

ACUTE APPENDICITIS.

C........., N., Private Marine; age 33; white.

This man was admitted from this hospital, May 12, 1916. He is a member of our marine guard.

History.—He was taken sick three days ago with a pain in the region of gall bladder. He was slightly jaundiced at the time. No symptoms referable to the appendix at that time. He was given the usual purgatives. He felt fairly well until last night when he began to have violent pains in the abdomen which became localized in the right iliac region this morning. He vomited.

Physical Examination.—There was tenderness over region of appendix, some rigidity. He states he has had a similar trouble once before. Skin jaundiced. No tenderness over gall bladder.

Operation by Passed Assistant Surgeon H. F. Lawrence, U.S. Navy.—Ether anesthesia. Gridiron incision. Peritoneal fluid increased; appendix bound closely to cecum and enlarged meso-appendix, short and very thick. Appendix removed by dissection. Stump cauterized and gut returned to abdomen.

THE TREATMENT OF GALL-STONE DISEASE.

Mathias Figueira, M.D., F.A.C.S.

Case I. This patient came to the hospital with the history of stomach trouble and more or less pain for a number of years. She remembers suffering severe pains at intervals, several years ago. She had no severe pain lately but has suffered from stomach and intestinal trouble in the form of indigestion and constipation. At admission to hospital besides the above symptoms she did not present anything noticeable except a quite marked tumor under the right costal border moving with respiration and continuous with liver. It was not very tender and abdomen did not show any marked signs except moderate distension. At operation the tumor was found to be caused by a very much enlarged gall bladder, containing fifteen stones, one of them as large as a pigeon's egg. It weighed 130 grams. The length was 15 centimeters and the greatest width 6 centimeters. The walls were 5 millimeters in thickness. On section it showed the lesions of chronic inflammation. Patient made a good recovery and is now well.

Case II. The second case I report, came under by care two years ago. A young woman was taken with abdominal pain that soon centered under the costal border on right side and required hypodermic injections of morphine for relief. After pain subsided her stomach was so irritable that rectal alimentation had to be resorted to for several days. Under the most careful dieting and care she recovered but was soon taken with a similar attack and that followed by another at such close intervals in spite of the best care and advice that operation had to be done to save her from grave complications. She is now well.

Comment.—That once the diagnosis of gall stones is made, operation is the best treatment, all surgeons are agreed. The internists, many of them, still claim that a good many cases of gall stones can be cured by medicine and proper dietetic treatment. It is certainly possible for gall stones under rare conditions to pass into the intestines and be eliminated that way, and anyone who has seen much of gall stone disease knows that under medical treatment many cases will very much improve. The attacks of pain will disappear, the digestion will improve, the appetite return and such patients seem to recover and remain comparatively well for months, sometimes for years, and the doctor who treated them will enter them in his records as cures. Months or years afterward when the patient has passed out of the doctor's memory, probably out of his neighborhood, as such cases often do, another doctor will get the case and will have to operate on it to save life.

The first case reported in this paper is probably such a case and is down in somebody's book as a cure of gall stones by medicine.

I have no doubt that if the history of cases that come to the operating table with such grave complications as adhesions, perforation, involvement of neighboring organs, stricture of duct—if the history of such cases were carefully traced, the history of gall stones "cured" by medicine would be elicited.

Medical treatment bears the same relation to these cases as the ice bag does to complicated appendicitis cases.

As for those corresponding to the second case here reported, even the internists will admit the urgent indication for surgical interference.

It is very important, I believe, to bear in mind that of all organs the stomach oftener presents symptoms caused by disease in other parts, and the gall bladder, in many cases of obscure and insistent stomach trouble, is the organ at fault. Appendicitis and gastric ulcer have often been operated upon when the gall bladder was affected and gall stones were the cause of the trouble.

The statement of Dr. Mayo of Rochester in a recent publication that, of 375 cases of gall stone disease coming to his clinic for operation, 13 per cent had been previously operated upon for the wrong disease, should be a warning and a lesson to all of us. And the practice of exploring the gall bladder in all abdominal operations is a wise one as gall stones are often present with other abdominal diseases.

I know of a case in which the surgeon operated for salpingitis with abscess. He was wise enough to explore the gall bladder which he found was full of gall stones. He did not remove them as the patient's condition did not permit, but afterward informed her of the condition. Within a few months symptoms of gall stones developed and he operated with success and credit. Had he neglected to examine the gall bladder and inform his patient when symptoms of gall stone developed afterward, the chances are he would have been accused of operating for the wrong disease.

When the diagnosis of gall stone disease is once made what operation is the best to perform? Keen's Surgery, the latest standard work, published only a few years ago, contains the following statement by the leading surgeons of the country on gall bladder surgery: "Cholecystostomy we consider the normal operation for gall stones." In 1,600 cases of gall stones reported cholecystostomy was performed in 1,200 cases (just three-fourths of all cases) with a mortality of less than 2 per cent.

Since the above statement and statistics were published quite a change has taken place in the practise and teaching of some leading clinics in this country, and cholecystectomy is now considered the best operation for gall stones with a mortality a little less than cholecystostomy. Statistics, published last year from the Mayo Clinic at Rochester, show a total of 763 operations for gall stones. Of this number 589 were cholecystectomies and 74 cholecystostomies. This is a complete reversal of the practise and results of a few years before.

There is no doubt that the above results can only be attained with the unusual skill and experience of the surgeons at the head of that clinic. Cholecystectomy requires more skill in its technic and greater care to avoid injury to the bowel, the vessels and main duct. This is the statement made by Dr. Mayo in comparing the two operations.

I believe statistics from other clinics and from the general practise of surgeons will give different figures corresponding rather to the figures in Keen's Surgery. The statement of Crile, that the cases of cholecystostomy that came back to the surgeon are the cases in which the gall bladder was diseased or the mucous membrane inflamed or the cystic duct closed or some other lesion present besides the gall stones, is certainly true.

If at operation the gall bladder has a normal appearance, the mucous membrane is not markedly altered, the bile flows freely and looks natural, I believe cholecystostomy is the best operation in the hands of the general surgeon. Maybe it does not speak for so much surgical skill but the curing of disease and saving of life is the main thing.

When on the other hand if the gall bladder is changed by inflammation or disease, when the mucous membrane is altered or degenerated, when there is empyema or obstruction of duct, then cholecystectomy is the operation and the surgeon not equal to it should pass the case to better hands.

There are, however, cases in which the indications are not so clear and distinct, border cases as it were. If I am permitted an opinion I would say that in general surgical practise, with the skill of the general surgeon at hand, the patient should be given the benefit of the doubt and cholecystostomy performed.

If perchance he should be one of the cases that come back then cholecystectomy can be done.

Quoting again from a noted surgeon, "the drainage operation may be chosen for primary safety with later cholecystectomy recommended as a probable necessity in the future, a two stage operation."

I will conclude by saying that when the deep sea captains follow such opposite routes, it behooves the skippers of smaller craft to sail by the dead reckoning of judgment and prudence, rather than by the sun and stars.

CLINIC AT SAINT CATHARINE'S HOSPITAL.

James C. Kennedy, M.D., F.A.C.S.

Gentlemen: This clinic is held in honor of Dr. Lewis Stephen Pilcher, one of our most distinguished confrères. He has now reached his fiftieth anniversary as a practicing surgeon.

His useful life as a highly respected citizen, an earnest and competent surgeon, and as editor of a widely circulated surgical journal, has given him a high place in the esteem of the people of our city and of his medical and surgical colleagues. By his teaching and example, always the true surgeon and gentleman, the distinguished editor and scholar, he has justly earned his place among the great men of modern times. This clinic, comparatively insignificant, will evidence the gratitude of myself and my colleagues of Saint Catharine's Hospital for the great work Dr. Pilcher has done throughout a long and honorable career.

CHRONIC APPENDICITIS: GALL STONES.

The first patient for operation this morning is this slenderly built woman, whose age is thirty-nine years. She was born in this country, and is the mother of two children; she has menstruated regularly and has never had any miscarriages. Her previous history is negative, except for the diseases of childhood. She states that two years ago she began to have attacks of pain in the right iliac fossa, and that, in addition she has had almost a constant feeling of fullness and heaviness in the right hypochondrium, accompanied by a dragging sensation over the hepatic area. This patient was sent into the hospital with a diagnosis of chronic appendicitis which we believed to be correct; still we do not believe that all the symptoms stated are due to appendicitis. Laboratory findings together with the x-ray examination, are negative. However, in the prone position, palpation over the region of the gall bladder elicits soreness, but not sharp pain; the same is found in that portion of the liver, bounding the gall bladder. These are two symptoms that I hold in high regard in gall bladder disease. She has never had biliary colic or jaundice, but when the abdomen is open we must not forget to examine the gall bladder.

Our incision is made below the umbilicus, through the right rectus muscle. We are now in the peritoneal cavity, and find a chronically inflammed appendix which we will remove; the stump is inverted according to the Dawbarn method. I now place my right gloved hand into the peritoneal cavity; the uterus and ovary are correct,—now upward, and I find everything normal, with the exception of the gall bladder which is filled with calculi. We will now close our appendiceal wound, and, using the Mayo Robinson incision, do a cholecystostomy for cholelithiasis. On opening the gall bladder in the usual way I am able to remove these stones with the forceps. Each stone, as you see, is about the size of a small bird's egg. This is the last one, making thirty-two calculi in all. With the ducts now freed, we will drain the gall bladder as it is done ordinarily.

We all know that calculi may exist in the gall bladder or in some portions of the bile ducts without giving rise to any symptoms, or at least so few that it is almost impossible to make a diagnosis of their existence. This statement is borne out, in some degree, by this case.

GALL STONE DISEASE.

Here is another operation for gall bladder disease, but it differs materially from the case we have just concluded. The patient is a stout lady, and on referring to the History we find her weight to be 180 pounds, her age is fifty years, she was born in this country, and is the mother of four children. There is a scar in the lower abdomen, but the patient was unable to state the reason for the operation which it marks. She has had paroxysms of pain, chills and jaundice for four years. From the time of her arrival at the hospital she has had all the classical symptoms of obstructed gall bladder disease.

On opening the abdomen, we find, with the exception of the hepatic ducts, that the biliary canal is filled with calculi. Since this is so, the obstruction to the flow of bile into the intestinal canal must be in the common duct—here is a large stone lodged at the ampulla of Vater. This was surmised because of her jaundice. As you know, jaundice is produced by the passage of bile and its coloring matter from the liver into the lymphatic vessels and the blood. Its essential cause is obstruction of the outflow of bile into the intestines. The obstruction does not prevent the secretion of bile by the liver, hence there is a consequent dilatation of the biliary ducts and canals, stagnation of their contents, and absorption by the lymphatics of the biliary coloring matter and acids which reach the general circulation by way of the thoracic duct. The biliary acids have the power of destroying red blood cells, thus setting free hemoglobin—the free hemoglobin increases the formation of bilirubin by the liver and so may serve to intensify the jaundice. The characteristic lemon-colored appearance of the skin and conjunctiva and urine are noted at this stage. The feces become clay colored, owing to the absence of coloring matter, and we often have constipation accompanying these cases, with alternating attacks of mucous diarrhea, as a prominent symptom.

We will now open the gall bladder, and we find many small stones floating in the dark colored fluid. These are removed with the scoop. The calculi in the cystic duct are easily milked up into the gall bladder and removed. Here in the common duct, however, is quite a large stone which we can neither push upwards nor down into the duodenum. I am unable to crush the stone with my fingers—and I never use a forceps for that purpose lest the walls of the duct be damaged permanently,—so we will do a choledochotomy; here is the stone. You will note the free discharge of bile which flows into our laparotomy pads and which we will continue to sponge away until it stops. Two catgut sutures are placed through the edges of the cut into the common duct, and passed around a long, dressed, rubber tube, fenestrated at its lower end. These sutures will hold the end of the tube in place for about ten days. Two heavy strips of iodoform gauze are placed on either side of this tube, and will be left in place several days after the tube is removed. The gall bladder is also drained with rubber tubing, and the abdomen closed in the usual way.

Chronic Appendicitis.

This is a case of chronic appendicitis. Our patient is a young girl of seventeen years, born in this country. For the last year she has had variable symptoms, paroxysmal pains being the most constant; these were confined to the right iliac fossa. Associated with this there has been intestinal indigestion, alternating with mucous diarrhea and constipation. The patient is extremely nervous—a symptom very prevalent in chronic appendicitis.

The right rectus incision is the one we will use, pulling aside the muscle after dividing its anterior sheath, and incising the posterior sheath and peritoneum which leads us into the peritoneal cavity. With the finger we endeavor to hook up the cecum, but we are prevented from doing so, with the freedom we usually experience, because of the adhesions. We find the appendix somewhat chronically inflamed and enclosed in a well formed pocket. Bands running from the ileum to the cecum constitute this; here in the cecal wall I find a hard mass snugly imbedded. We will remove this. It is, as you see, a calcified body, about the size of a ten cent piece. It is white and hard, and may be a calcified gland or a small ruptured blood vessel which has undergone calcification. Perhaps it was this which caused the adhesions, through irritation and the resultant inflammation. We will send the specimen to the laboratory and perhaps the pathologist will be able to help us out. The appendix is somewhat thickened; we will remove it, and invert the stump according to the Dawbarn method.

FRACTURE OF PELVIS; RUPTURE OF BLADDER.

The last case for operation today is this small boy who was brought in by the ambulance this morning. He is twelve years old. Several hours ago, he climbed upon the seat of an automobile truck while the driver was delivering goods. He started the machine, and then becoming frightened, jumped from the truck and fell under the wheels. The rear wheel passed over him, causing a comminuted fracture of the pelvis and rupture of the bladder. We thought that he would die, soon after his arrival in the hospital, from shock, but he is still alive and has some pulse. We bring him to the operating room because it is impossible to pass a catheter into his urethra, and because, as you see, his pernieum is bulging to an alarming extent from extravasated urine. We will make a single incision into the perineum, and you see the large amount of bloody urine which escapes. We believe this to be a humane thing to do, notwithstanding the fact that we do not believe the boy will live. By passing the finger through the wound we find the pubic bone torn from its mooring, and lying on the rectum. The ileum is fractured in several places. We will do nothing further now, except to place a drain in position to carry off the extravasated urine. We must await developments.

SURGICAL CLINIC AT ST. JOHN'S HOSPITAL.

Warren L. Duffield, M.D.

PROBABLE FRACTURE OF BASE OF SKULL, IMMEDIATE DECOMPRESSION.

Clinical History.—A male 60 years of age was brought to the hospital about midnight with the history of having been struck by an automobile. When admitted he talked in an irrational manner, was actively delirious, requiring restraint, and his pupils were said to have been unequal. When seen about one-half hour later he was in a deep coma and could not be aroused.

Examination revealed four wounds of the head and a fractured nose. One wound directly over the sagittal suture was incised and a small portion of the bone had been gouged away but there was no demonstrable linear fracture. The other wounds were not complicated by any traumatism to the bone. The pupils were now equal, contracted and slowly responded to light; the pulse was 90 and of good quality. Slight patellar reflexes could be elicited after some effort. There was tonic muscular spasm of all extremities but slightly less pronounced in the left forearm. During the course of the examination there had been no active movements of the extremities. Upon exploring the scalp wounds all extremities with the exception of the left arm were moved by the patient, but with no apparent return of consciousness. Upon further examination of the left arm it was found to be flaccid with the exception of the aductors which were in a condition of tonic muscular spasm. A right temporal decompression was decided upon.

Operation.—Without any anaesthesia and through an inverted

U incision over the right temporal region the fibres of the muscle were separated and the skull opened with a Hudson drill and the opening enlarged with rongeur. There was no bulging of the dura but upon opening it cerebrospinal fluid escaped in large quantity and with considerable force. At first the fluid was perfectly clear but as it continued to flow it became markedly blood stained. Up to the time of opening the dura the patient had been quiescent but as soon as the fluid began to escape he commenced to talk in an incoherent manner and began moving his extremities. The brain substance was dark in color but there was no tendency to hernia. A rubber tissue drain was introduced to the dura, the muscles sutured over and the flap accurately restored.

Post-Operative History.—The average pulse, temperature and respiration for several days were respectively 100, 101 1-5 and 30. His blood-pressure six days later was 90 and 120; and twelve days after operation 110 and 135. For about ten days there was an active delirium almost every night and a mild delirium during the day, though when spoken to he would answer in a rational manner and as a test was able to read a newspaper. At present his pulse and temperature are normal and only occasionally is he slightly irrational at night. All bodily functions are apparently normal and there is no paralysis.

Comments.—Dr. William Browning made an examination several days after the operation and expressed the opinion that the delirium was due to an old and chronic alcoholism.

It is of course an open question whether this patient would not have recovered under expectant treatment but as all symptoms of intracranial injury had apparently increased during the first hour and a half of observation an exploratory craniotomy was decided upon and the results would seem to justify the decision.

Gastro-Enterostomy for Duodenal Ulcer.

Clinical History.—The patient is a married woman, 38 years of age, whose family history is negative except for the death of one sister from tuberculosis. The patient had an attack of pneumonia seven and one-half years ago, had puerperal peritonitis eight years ago, and has given birth to seven children. Twice during each of the past six years she has had attacks of profuse hemoptysis with severe pain in the epigastrium. Her most severe attack was in September, 1914, when in the course of two weeks she had fourteen hemorrhages.

Her present illness began one week ago and during that time she has had eight hemorrhages each lasting about five minutes. Repeated doses of coagulose were given by her physician, Dr. C. B. Cortright, to control the bleeding, as at this time she would not consent to operation. Her epigastric pain is somewhat relieved by vomiting. There is macroscopic evidence of blood in the stools. She is the subject of a mild pulmonary tuberculosis, though at present tubercle bacilli cannot be demonstrated in the sputum. In May, 1915, she was twice operated upon, once for the removal of a diseased ovary and later for the removal of the appendix.

Examination is practically negative except for a small point of considerable tenderness in the epigastrium. The stomach contents are acid, free HCl 15, combined acid 27, total acidity 46. No lactic, acetic nor butyric acid present. Maltose and pepsin and a large amount of mucus present. Microscopically a trace of blood, many fungi and many starch granules can be found. Her blood count is red-cells 3,950,000; leucocytes 6,800; hemoglobin 90 per cent. and polymorphoneuclear cells 69 per cent. Examination of feces reveals a small amount of blood. X-ray plates show a filling defect of the pyloric end of the greater curvature and the duodenum immobilized to the left of its normal position. There is an overlapping of the duodenum and pylorus and a consequent blurring of the picture.

Operation.—Through a vertical right rectus incision an ulcer about one and one-half cm. in diameter can be distinctly palpated in the inferior wall of the duodeno-pyloric junction and at this point there are numerous thin but firm adhesions. The duodenum and pylorus are drawn upward and to the right by thin but firm perigastric adhesions which extend downward across the duodenum and pylorus. A typical Mayo posterior gastro-enterostomy is now performed without difficulty except for posterior perigastric adhesions, similar to those above noted and which require division before the stomach wall can be drawn through the meso-colon.

Comments.—After the abdomen was opened and before performing a gastro-enterostomy a Finney pyloroplasty with resection of the ulcer, or a simple resection of the ulcer followed by a posterior gastro-enterostomy were both considered but abandoned because of the immobility of the pylorus due to the perigastric adhesions which would have required considerable time for their dissection. With the patient's history of pulmonary tuberculosis it was considered wisest to do the simplest and quickest operation which would give relief, and this seemed to be a posterior gastro-enterostomy.

Post-Operative History.—For seven days her recovery was smooth and uninterrupted and all sutures were removed. On the eighth day vomiting began and became more constant, the vomitus consisting mainly of bile. On the tenth day the abdomen was again opened and the second operation revealed the meso-colon folded on itself and firmly adherent over the anastamosis producing an obstruction. Following the second operation there was slight and diminishing vomiting. At this time her convalescence is well established.

Comments.—There are two features of interest in this case. Before operation the hemoptysis had been so pronounced that she was quite exsanguinated, yet seven days post-operative, though the vomiting was constant and persistent for about forty-eight hours, there was not the slightest evidence of blood. A fair assumption would seem to be that the ulcer had become quite firmly healed in the interval.

The second point of interest is that in spite of a very easy gastro-enterostomy, excepting for a few posterior perigastric adhesions, and with but little handling of the intestines very dense adhesions were found across the entire meso-colon on the tenth day. These adhesions were out of all proportion to the traumatism inflicted and were more extensive and greater than we have ever seen under the same conditions. Can it be that the repeated doses of coagulose had increased the viscosity of the peritoneal fluid and thus favored the formation of early and dense adhesions?

STAB WOUND OF THE ABDOMEN INVOLVING THE LIVER, STOMACH AND OMENTUM.

A colored boy of nineteen was brought into St. John's Hospital by the ambulance, suffering with an incised wound of the abdomen and stating that about one-half hour before admission he had been stabbed.

Examination reveals a well developed muscular youth with an incised wound 2 cm. long slightly to the left of the median line at a point midway between the ensiform and the umbilicus, and protruding from the wound is a mass of omentum 2 cm. wide and 7 cm. long. The pulse is 76, regular and of excellent quality, the temperature is normal and there is no vomiting, abdominal rigidity nor complaint of pain, and no evidence of shock.

Operation.—A vertical incision is made ½ cm. to the right of the wound and reveals an incision passing through the edge of the liver. The liver is sutured on both surfaces. There is also a wound 2 cm. long in the anterior wall of the stomach through which gas can be seen bubbling. A double row of Lembert sutures are here introduced. No further injury can be detected on the right side but on the left two severed omental vessels which are bleeding briskly are ligated. The base of the protruding omental mass is now ligated and sectioned within the abdomen, a cigarette drain introduced to the neighborhood of the opening into the stomach, the operative wound closed in layers, the protruding omentum removed and a small drain superficially introduced into the stab wound. In order to prevent all further infection of the abdomen the protruding omentum was carefully excluded from the operative field before beginning the operation and was not touched until after the laparotomy wound was closed.

Post-Operative History and Comments.—Following operation there was no vomiting, fluids by mouth being withheld for forty-eight hours, during which period Murphy drip was administered. At no time was there evidence of peritonitis and the drains were removed on the fourth day. A satisfactory and prompt recovery was made, and the patient was discharged fourteen days from the receipt of the injury.

This case serves well to illustrate the absolute necessity of abdominal exploration in all cases of penetrating or suspected penetrating wounds of the abdomen, a practice which is or should be universal. Assuming that there had been no protruding omentum one might have felt almost justified in awaiting the development of symptoms for there were certainly none present to indicate serious injury. To have delayed, with actively bleeding omental vessels and a penetrating wound of the stomach wall, would have been to have waited too long.

ACUTE INTESTINAL OBSTRUCTION DUE TO PROCIDENTIA UTERI.

This case is reported because of its apparent rarity. The index of the first sixty volumes of the Annals of Surgery does not record a case.

Clinical History.—A Hebrew woman of 57 years was admitted to the hospital and the only history that could be obtained was that twenty-four hours previously vomiting had begun and had increased in frequency until at the time of admission it was constant.

Examination revealed a woman who appeared very much older than the age given. She was very poorly nourished, her pulse was weak and thready and the abdomen markedly distended. She was constantly vomiting small quantities of fluid almost black in color. Protruding from the vulva was a mass under considerable tension which consisted of uterus, bladder and rectal wall—a complete procidentia uteri. All hernial openings were carefully examined but nothing abnormal found.

We were unable to determine from her how long she had suffered with a procidentia or whether it had increased in size or had changed in consistency coincident with the onset of vomiting, but received the impression that there had been some change in it at this time.

Feeling that the cause of her obstruction was a strangulation of bowel in the everted vagina, but not being able to exclude other possible causes, it was decided to reduce the mass and wait for an hour, as her condition did not seem to warrant any greater delay. She was placed in a slightly exaggerated Sim's position, the mass reduced without great difficulty and the vagina tamponed.

One hour later, the vomiting still persisting, her abdomen was opened through a right rectus incision. Upon passing the hand down into the pelvis a large mass of small intestine could readily be dislodged. The intestine was dilated to about three times its normal size and was of a deep bluish color. The large intestine from the rectum back to the cecum was thoroughly but quickly inspected and found to be collapsed. The ileum was found to be collapsed back to a point about 45cm. from the cecum and at this point there were no definite signs of obstruction. Proximal to this point the intestine was found distended and congested and distal to it collapsed and light in color. Upon handling the bowel the fecal current passed on and into the cecum. The uterus was drawn up and rapidly fixed to the anterior abdominal wall and the abdomen closed as quickly as possible.

It was doubtful whether she would live through the operation; but under stimulation the operation was completed. She died about five hours later.

Though no definite point of obstruction was demonstrable it is our opinion that the obstruction was due to the gut being forced into the sac formed by the everted vagina—a form of intestinal obstruction which we have not seen recorded.

SPECIAL CLINIC AT THE LONG ISLAND COLLEGE HOSPITAL, MAY 12, 1916.

Wm. B. Brinsmade, M.D. and James Watt, M.D.

INGUINAL HERNIA.

THE patient is a man, thirty-five years of age, who three months ago first noticed pain in his right inguinal region. This was not brought on by any particular muscular effort, although his ordinary vocation is one that entails hard work. Since its inception the pain has gradually increased and is now fairly constant. Six weeks ago he first noticed some protrusion in the painful region. This protrusion has gradually increased in size, is now a constant annoyance and hinders his work.

On examination, the patient standing, a protrusion the size of an egg is visible emerging from the inguinal canal. On percussion this tumor gives a resonant note and on manipulation disappears within the abdomen with a gurgle. The history and results of the examination indicate the presence of a complete inguinal hernia. The question arises whether such a case is one for which an operation should be done or not. All operations are operations of either necessity or election. When an operation is necessary a considerable risk to the patient must often be assumed by the operator, whereas in operations of election a surgeon should not assume any risk that can possibly be avoided. A hernia such as the one under consideration might be held in place by a truss, but a truss is a very inconvenient and troublesome implement to wear, if one is to earn his living by hard work. We know also that a truss will not cure such a hernia as this, and notwithstanding that a truss may suffice to retain the hernia under ordinary circumstances, it not infrequently happens that in spite of the presence of a truss the hernia escapes under special conditions of exertion and is strangulated, the very presence of the truss adding to the dangers of strangulation. In this particular patient the records show that his kidneys, heart and lungs are all in good condition and we have therefore advised an operation, since in more than 95 per cent of the cases done in this clinic a permament cure has been secured by operation.

The surgeon has at times been called upon to give an opinion as to whether a certain hernia was caused by an accident. The teaching in this clinic is that there must be two causes for hernia; first, a predisposition by way of weakness in the abdominal wall and second, increased abdominal pressure. Without both these factors at work it is doubtful if a hernia would ever occur.

The method of operating adopted by us is that known as the Bassini operation; so far it has given in our hands perfect satisfaction. The operation is done in about 15 minutes. In most cases the person has but little ether, he seldom vomits and there is no shock. Our rule is to keep these cases in bed for eight days. Upon the ninth day he is allowed to sit up in a chair, and thereafter to walk around as strength returns. The cases are dismissed on the fourteenth day after operation with definite instruction to have the bowels move daily, and to engage only in moderate exercise; to avoid lifting of heavy articles for six weeks, after which time they are permitted to take up their former method of living.

Fracture of the Patella.

A man forty years old, while walking in the street, caught his foot against an obstacle and, in an effort to save himself, threw his body backward. As he did this a snapping was felt in his right knee; he sank to the ground and found to his surprise he could not lift his right leg. He was taken home and an evaporating lotion was applied to the knee for two days when he was sent to the hospital. When admitted the right knee was swollen and the patella was found to be the subject of a transverse fracture, with separation of the two fragments so that a finger could be placed easily between the two. He has now been three days in the hospital, five days have passed since the occurrence of the accident. There is considerable redness and swelling about the injured knee, and it is evident that the knee joint is filled with bloody fluid. In considering what is the best thing to do for this man, the prime necessity is for him to get back to his work with a sound limb in the shortest time possible. An absolute bony union of a broken patella is not essential to excellent functioning. Therefore, if operation is done upon this man simply for bony union, the operation would be one of election and not of necessity. The patient is advised to have the knee joint opened, the blood removed, and the broken and lacerated tissues restored to their normal positions, and we feel safe in promising him that he will have a more perfect result in a shorter period of time by such procedure than by waiting for healing to take place without operative interference. We had intended to perform this operation this morning, but we find that there is still present much evidence of reaction in the tissues with considerable infiltration of blood. Realizing that the knee joint is the largest joint in the body, and that the slightest infection may lead to the loss of the joint, or even of the leg, we think it better to postpone surgical interference until the tissues are restored to a more normal condition. When we do open this joint with a curved transverse incision we shall find that not only the patella is broken, but that both lateral ligaments are torn well down on either side of the joint. We will also observe that when the laceration of the lateral ligaments have been repaired, the broken fragments of the patella will have almost restored themselves to their proper position. The dense fibrous fascia, covering the anterior surface of the patella, will have been torn across and its lacerated edges will have dropped down like a fringe between the fragments. These fibers are lifted out and the fascia sutured with a few fine catgut sutures. After the operation the extended leg will be put in a plaster case, and the patient confined to bed for seven days, at the expiration of which time the case will be taken off and the skin sutures removed. A lighter case is then applied and cut into anterior and posterior sections. The patient is allowed to get out of bed and sit in a chair for the next five days, at the expiration of which time the case is left off while the patient is in bed and reapplied every time he gets up. After eighteen days passive motion and massage are practiced and the patient is encouraged to bend the knee. This method of treatment is kept up until the patient is able to flex his knee to a right angle, after which he is discharged with instructions to carry a cane in the streets constantly for the next two months. Such care and help is important to avoid dangers of refracture.

The functional results from the closed method of treatment are often so excellent that a surgeon is not justified in urging an operation in cases of fracture of the patella. Such an operation should never be performed except under the most rigid asepsis. In this clinic we never put anything into a wound which has not been boiled; the operator and assistant should leave an operation with their gloves as clean as when they commenced; the blood clot being removed with toothed forceps and a spoon curette. If there is any question about the desirability of doing an open operation, always decide in the negative. One should be perfectly sure that the tissues have a normal amount of resistance, and that the surroundings are surgically perfect. It is for this reason, therefore, that operation on this patient is postponed until a future date.

CHOLECYSTECTOMY FOR CHRONIC INFLAMMATION OF THE GALL BLADDER WITH GALL STONES.

The patient is a woman forty-two years of age who was brought to the hospital six days ago, suffering acutely with pain in the upper right quadrant of the abdomen and over a small area in the back close to the spine. She had been vomiting for two days and had a temperature of 102½ and was jaundiced. During the past six years she has had from time to time attacks similar to the present one, but never so severe. She has had two pregnancies during this period and during each pregnancy has had several attacks similar to the first one. There was bile in her urine and her stools were clay colored. She commenced to improve as soon as she entered the hospital and her jaundice has almost disappeared. We never operate upon any cases of pronounced jaundice where it is possible to postpone operation. The patient describes so-called bilious attacks as occurring from time to time and not associated, in her mind at least, with the ingestion of or abstinence from food. She is a well developed women of good frame. It is fair to assume an obstruction to the flow of bile. I want to call particular attention to Boas' sign which is pain over a restricted area in the back, directly behind the region of the gall bladder. I have never failed to find stones in any case in which this symptom was distinctly present, but on the other hand I have often found stones where the symptom was not present. With such a history and condition as has been described one is justified in urging an operative procedure because it is certain that she will never be well of these attacks until the cause is removed, and that she may develop conditions which might become rapidly fatal. Mere presence of gall stones alone does not demand operation, since statistics show that in about 95 per cent of all adult cadavers gall stones are found.

The patient has accepted our advice and is ready for operation. As the ether is administered it is noticeable that she takes it well. A pad placed under her back brings the liver well to the front. A transverse incision is made through the right rectus muscle, about 1 inch below the border of the ribs, because it seems to give a wider field for easy operative manipulation, and also because it is easier to close. I do not know who first suggested this incision, but I saw it used in Germany many times several years ago, and more recently it has been brought to the attention of American surgeons by Dr. Moschcowitz of Mt. Sinai Hospital, New York. After the abdomen has been opened a large sheet of gum rubber is placed so as to cover the exposed intestines, and on this rubber the gauze sponges that are used are placed. Thus these sponges absorb whatever discharge there may be without coming in contact with the intestines. I believe this procedure to be of considerable value in prevention of that abomination of abdominal surgery, adhesions. The region having been oriented we discover a small gall bladder with thickened walls, within which just as it narrows down to the cystic duct a stone can be felt. The neck of the gall bladder is tightly contracted on it so that it cannot be pushed up into the fundus of the gall bladder. The entire gall bladder and cystic duct are hard and thickened. Nothing is discovered in the common duct by palpation. We have then to deal with a diseased gall bladder and duct containing a stone. In our opinion this gall bladder is diseased beyond repair and must be removed. If left behind and drained it will merely become a foreign body. The cystic duct is therefore caught in a right angle clamp, by blunt dissection the cystic artery is separated and tied. The duct is then cut across between two clamps and the gall bladder removed from behind forwards, leaving the surface of the liver which oozes very slightly. A long probe is then passed through the duct into the common duct and the ampulla of Vater for exploration. No obstruction is discovered. The duct is then ligated. A long cigarette drain is fastened to the duct and another drain, containing a split, soft rubber catheter, packed with gauze, is placed beside it. Notice that both these drains are covered with gutta percha tissue so as to prevent any irritation which might set up adhesions. All sponges are now removed and counted. There is no moisture at the bottom of the wound or around the liver so the rubber dam is removed.

We are sure that this woman will be restored to her family in three weeks in better health and with a better disposition than she has had for a long time. Whenever you find either a man or woman who is cranky and disagreeable to live with, do not put it down to disposition or cussedness until every effort has been used to find a local or pathological cause. In this connection I would impress upon you once more the necessity of arriving at a diagnosis first, by the history; next by examination; and finally as an addendum to these, the use of the laboratory. Do not learn to depend entirely upon the X-ray for diagnoses; valuable as it is, it is sometimes deceptive and sometimes also it fails to reveal the condition which is present.

ARTIFICIAL ANUS.

In certain cases of cancer of the rectum when the entire rectum can be removed by the combined abdominal and either perineal, sacral or vaginal operation, it becomes necessary to create an artificial anus. The comfort and effectiveness of the new opening determines the well-being of the individual. For the satisfactory control of an artificial anus we have found that the following method gives the best results: A transverse incision is made above the pubes, and the sigmoid isolated. The gut is then cut across well above the growth and a second small incision is then made through the skin about 2½ inches above the transverse incision and to the left of the median line. This brings the opening well above the pubic hairs. By blunt dissection through the fibres of the rectus, keeping well in front of the peritoneum a passage about 2½ inches long is created down to the transverse incision. The proximal cut end of the gut is drawn through this passage and fastened to the peritoneum at this point of entrance in the abdominal wall and to the skin at its exit. The operation for the removal of the cancer may be performed at this or subsequent sitting. The effect of this procedure is to create a loop or segment in which fecal contents may collect beyond which there is a perpendicular passage through the rectus muscle which seems to compress the bowel and control its contents to a mild degree. I have used this method six times, and my friend, Dr. Fiske. has used it four times, and the results have been satisfactory in all these cases, both to ourselves and to the patients.

I now present a patient who was the subject of an artificial anus thus made. A woman, who was operated upon eighteen months ago on account of a growth in the rectum. The operation was performed as described. The after course was hard for several months owing to a large amount of tissue-sloughing through the peritoneal vaginal wound. She has now gained weight and recovered full strength and considers herself a well woman again. The artificial anus functionates in a very satisfactory manner; by using a small syringe each morning she is able to empty her bowel of the fecal contents. It takes her about one-half hour each morning to perform her toilet for the day. She wears no cup and only a simple compress made of a few layers of gauze and cotton, which is pinned to her undervest. I believe this is far better than any other form of artificial anus. As far as I know this particular procedure has not been described. I have reserved any description of this procedure until it had been performed several times, and am now glad to present it to Dr. Pilcher on the occasion of our celebration of his fifty years of devotion to humanity and science.

EDITORIAL

HEALTH INSURANCE.

INSPECTION of the third draft of the health insurance bill that will be introduced at the next session of the legislature to replace the so-called Mills Bill which failed of passage last winter indicates that much additional consideration has been given to details of the previous draft that were manifestly faulty. For instance, neither previous draft mentioned the compensation for medical services. Section 10 of the present draft is as follows:

"Medical Service. The carriers, subject to the approval of the Commission, shall make arrangements for medical, surgical, and nursing aid by legally qualified physicians and surgeons, and by nurses or through institutions or associations of physicians, surgeons, and nurses. Provision for medical aid shall be made by the carriers by means of either:

"1. A panel of physicians to which all legally qualified physicians shall have the right to belong, and from whom the patients shall have free choice of physicians, subject to the physician's right to refuse patients on grounds specified in regulations made under this act; provided, however, that no physician on the panel shall have on his list of insured patients more than 500 insured families nor more than 1,000 insured individuals;

"2. Salaried physicians in the employ of the carrier among which physicians the insured persons shall have reasonable free choice;

"3. District medical officers, engaged for the treatment of insured persons in prescribed areas;

"4. Combination of above methods.

"Section 11. Medical Officers. Each carrier shall employ medical officers to examine patients who claim cash benefit, to provide a certificate of disability, and to supervise the character of the medical service in the interests of insured patients, physicians, and carriers."

There is no question that the difficulties surrounding the manner in which a medical attendant is to be employed and recompensed are difficult and perplexing. The English method, by which the physicians of a section are invited to enroll themselves in the "panel" and thus signify their availability for service under the Insurance Act, has been found objectionable because of the excessive demands upon a popular physician and the consequent lack of employment for others equally capable but less in demand. This, of course, means that the quality of the services rendered is impaired by lack of time on the part of the overbusy doctor and tends to defeat the cardinal purpose of the Act—good medical care for the poorer classes. The attempt to remedy this defect by limiting the number of insured that any physician on the panel may treat to 500 families or 1,000 individuals will hardly accomplish its purpose for two reasons; first because 500 scattered families is at least 200 too many; and second, because the physician is not limited by the act as to the number of non-insured families and individuals he may treat, and, unless the fees assured by the Act are made generous enough to be attractive, the tendency will be to give them secondary consideration. This furnishes a valid argument for a fixed schedule of fees to be specified in the Act; or at least a list of maximum and minimum charges, to be modified by local conditions.

The second plan, of salaried physicians in the employ of the Commission with reasonable choice permitted to the insured, is open to the objection that unless the salary is sufficiently large, or an opportunity for building up a private practice is afforded, the type of physician attracted will not be of the best. Experience has demonstrated, in those municipal departments where salaried physicians are employed, that a certain degree of competition is required to keep them up to the advances in medical knowledge. Also, men who do not have a fair field in competition with the general profession are less likely to obtain positions in hospitals and clinics. It would seem that a modification of the third plan might offer a fair solution of the problem. If the state were divided into districts of about 500 individuals and district physicians assigned under civil service rules on a moderate salary with the privilege of indulging in private practice to an extent that should not interfere with their regular duties, a reliable class of practitioners would be assured. The medical inspectors already provided for in the Act could see to it that the work was properly done, while the opportunity to build up a private practice would enable the district physician to provide for the future. The question of a fee schedule would also be eliminated under this plan.

The question of maternity benefits also demands further consideration. While it is true that the expenses of a lying-in are an added expense that is often a severe financial burden, it is not an unforeseen contingency like incidental sickness. The present provision in effect offers a bonus for each birth. As each marriage predicates pregnancy, so the planning for the event should promote thrift and frugality that are not likely to be exercised if the couple expect the expenses to be provided for by law. Therefore a part only of childbirth expenses should be provided from the funds, enough to insure adequate obstetric attendance, better babies and healthier mothers. Experience with many individuals of the poorer class demonstrates how wasteful they are. The compulsory nature of the proposed act recognizes this element of irresponsibility. It proposes to compel a saving against sickness and should contain no provisions that tend in any way to give the impression that the law places a premium upon sickness. The benefit clauses are a weak, if necessary, part of the Act.

H. G. W.

TOEING OUT AND TOEING IN.

MANY, many centuries ago, before the age of automobiles, before French dressmakers, before clothes and houses became paramount questions, our hairy ancestors wore skin for clothes and went barefoot. Some of their descendants have continued the habit and have found it both economical and healthful. Whoever heard of corns, bunions and painful flat feet among the aboriginal Indians or Negroes? They grow their own shoe leather, they toe in, their feet give them no trouble beyond an occasional stone bruise or abrasion. It is common sense to plant one's feet in the easiest position. The runner instinctively turns his toes either straight forward or a little inward to obtain the best purchase. The foot is like a three-legged stool with the three points of support at the heel, and the ball of the great and little toe. Common sense teaches one that the center of that tripod is the most stable point. If you stand on the edge of the stool, it will tip. If one throws his toes outward the weight of the body comes on the inner side of the foot, it everts and tends to flatten. Try it, barefoot, and see for yourself.

Because Louis the Fourteenth was short and had deformed feet, he toed out, put on two-inch heels, and set an example of a mincing gait that all Europe began to ape at once. It was found that the soldier balanced better during the manual of arms if he toed out. For these two inadequate reasons polite society painfully trains its children to imitate a dead and gone monarch who does not deserve such a memorial—nor any memorial, for that matter.

And now, just as people are beginning to appreciate that there is good sense in foot wear, comes a reactionary who advertises a "toe-out" shoe. We read "Toeing in is not merely a 'bad habit' of your daughter's—It is an alarming tendency of growth that means pain and lack of a graceful carriage on reaching maidenhood. Why not correct it *now—while you can?"* And so on.

Physicians as a rule have paid but little attention to the feet. They seem to be satisfied to leave everything except the grossest deformities to the chiropodist and the worst cases to the orthopedist. But before you, Doctor, give your unqualified approval to any type of foot wear, think over what the athletic trainer has to say and what the savage does, and then recommend the perpetuation of Louis, "Le Grand Monarch's" deformed feet. "Think it over," as the cant phrase goes.

H. G. W.

Obituaries

DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

JOHN EVANS SHEPPARD, A.B., M.D.

Dr. Sheppard was born on June 1, 1859, in Stoe Creek, N. J., and died at South Woodstock, Conn., on September 13, 1915. He was the son of George Wood Sheppard and Ruth Bacon, both of New Jersey.

His preliminary education was obtained in private schools and he was graduated at Haverford College in 1879 with the degree of A.B. His medical education was received at the University of Pennsylvania, graduating M.D. in the class of 1882.

He was married on August 11th, 1894, to Mrs. Janet Argyle Campbell.

During his professional life he was Aural Surgeon, Brooklyn Throat Hospital; New York Eye and Ear Infirmary, New York Church Clinic; Brooklyn Eye and Ear Hospital and the Long Island College Hospital. Instructor in the New York Post-Graduate Medical School, 1890-92; New York Polyclinic Medical School, 1893-97; Clinical Professor of Otology, Long Island College Hospital, 1896-1915.

A member of the American Otological Society, American Laryngological, Rhinological and Otological Society; American Medical Association; American Academy of Medicine; The Medical Society, County of Kings, of which he was president in 1904; Brooklyn Pathological Society, President in 1899; Medical Library Association of Brooklyn, president in 1910; Associated Physicians of Long Island, 1898-1915; Brooklyn Medical Club; New York Otological Society; Berlin Laryngological Society, and the Crescent Athletic Club.

W. S., Sr.

MEDICAL PAPERS.

1892	Head Injuries with Aural Complications.
1893	Pathology of the Mastoid Process.
	Removal of Ossicles.
	Boric Acid in Aural Therapeutics.
	Deaf Mutism.
1896	Acute Mastoiditis in persons suffering from Diabetes Mellitus.
	Hysterical Mastoiditis.
	Acute Middle Ear Catarrh.
	Vibratory Cicatrix in the Membrana Tympani.
1897	Analysis of 114 Cases of Mastoid Involvement with Middle Ear Suppuration.
	Mastoiditis.
	Three fatal cases of Otitic Brain Disease.
1902	Cases of Nasal Obstruction.
1910	Some cases of Otic Meningitis.
	A case of Tympanic Vertigo.
	A plea for the prevention of Adenoids.

1912 Otosclerosis as a cause of Deafness.
1914 The economic importance of Diseases of the Ear in School Children.

GEORGE RICHARD MONTGOMERY KUHN, M.D.

Dr. Kuhn was born September 2, 1847, at East Berlin, Pa., and died in Brooklyn, N. Y., November 5, 1915. He was the son of Joseph J. Kuhn and Jane Rebecca McCabe.

He received his early education in the public schools and Calvert College, receiving the degree of Ph.G. in the Philadelphia College of Pharmacy and that of M.D. at the Long Island College Hospital in 1872. During his professional life he was physician to St. Mary's Maternity and Hospital; a member of The Medical Society, County of Kings, from 1872-1915; Associated Physicians of Long Island, 1900-1915; Brooklyn Medical Society, 1903-1915; Brooklyn Pathological Society and a founder of the Catholic Benevolent Legion.

On November 13, 1879, he was married to Miss Mary Esther Hussey of Brooklyn, N. Y. His children are Mrs. Peter J. McGoldrick, Miss Pauline J., Ruth Agnes and John Sutherland Kuhn.

W. S., Sr.

WILLIAM LEWIS SUESHOLTZ, M.D.

Dr. Suesholtz was born August 24, 1876, at Showkut, Hungary, and died in Brooklyn, N. Y., November 26, 1915. He was the son of Hendrick Suesholtz and Francis Giesler, both of Hungary.

He was educated in the public schools and his medical education was received at the Long Island College Hospital, where he received his degree in 1907.

He was a member of the Medical Society, County of Kings, from 1914-15.

He is survived by his widow, Daisy M. Suesholtz, and one child, Kasaline Suesholtz.

W. S., Sr.

GEORGE WASHINGTON WELTY, M.D.

Dr. Welty was born July 4, 1845, at Emmittsburg, Md., and died at Brooklyn, N. Y., December 1, 1915. He was the son of Andrew Welty and Rebecca Black, both of Maryland. Was educated in the private schools of his native town. His medical education was received at the Long Island College Hospital and Bellevue Hospital Medical College, where he was graduated in the class of 1870. A member of The Medical Society, County of Kings, from 1878-1915 and Catholic Knights of America.

He was married on November 7, 1870 to Miss Sarah Douglass of Philadelphia, Pa. He is survived by three children, Mary Rebecca, Elizabeth Agnes and Josephine Lillian Welty.

W. S., Sr.

WILLIAM EPAPHRODITUS THOMAS, M.D.

Dr. Thomas was born in Clinton, N. Y., September 4, 1872 and died in Brooklyn, N. Y., December 14, 1915. He was the son of Henry E. Thomas of New York. After receiving preliminary education he entered the College of Physicians and Surgeons, New York, where he was graduated in the class of 1895. During his professional life he was physician to St. Luke's and Roosevelt Hospitals, Sloan Maternity and Vanderbilt Clinic.

A member of The Medical Society, County of Kings, 1898-1902; Associated Physicians of Long Island, 1914-15; Adytum Lodge No. 640, F. & A. M.

He is survived by his widow, E. Lucile Benedict, a son and daughter. W. S., Sr.

JOSEPH JOHN O'CONNELL, M.D.

Dr. O'Connell was born September 14, 1862 in Brooklyn, N. Y., and died at Staten Island, N. Y., January 1, 1916. He was the son of Patrick J. O'Connell and Annie Ambrose, both of Ireland. His early education was received at St. Francis Xavier College, New York, and St. Francis College of Brooklyn.

His medical education was under the direction of Daniel Ambrose, M.D. and the Long Island College Hospital, where he received his degree in 1887; this was followed as interne in St. Mary's Hospital. During his professional life in this city he held the position, Inspector of the Health Department; County Examiner for the Insane; Physician to St. Mary's Hospital and Maternity; Hospital for Mental and Nervous Diseases; Health Officer of the Port of New York, 1912-15.

A member of The Medical Society, County of Kings, 1907-16; Associated Physicians of Long Island, 1908-16; American Medical Association; St. Mary's Medical Club; American Public Health Association.

A member of the Brooklyn Club; Montauk Club; Crescent Athletic Club; Emerald Association, of which he was President; Brooklyn Lodge No. 22, B. P. O. Elks; Celtic Club; St. Patrick Society; Cathedral Club, and the Kings County Democratic Club.

Dr. O'Connell was married on November 10th, 1892, to Margaret Carty, who, with three children survive him, Harold, Mary Louise and Joseph.

Tribute to Dr. O'Connell

Albany, N. Y., January 19, 1916.

The Senate adjourned on Monday night in respect to the late Dr. Joseph J. O'Connell of Brooklyn, former Health Officer of the Port of New York. W. S., Sr.

E. BELCHER HYDE, M.D.

Dr. Hyde was born at Westbrook, Conn., in 1848, and died in Brooklyn, N. Y., January 14, 1916. His medical education was received at the University of New York, where he was graduated in the Class of 1883. From 1889 to 1895 he was a member of the Medical Society, County of Kings.

Dr. Hyde abandoned the practice of medicine about twenty years ago to take up the work of map making. He became very proficient in this work and his maps and atlases of Long Island are now in use by the various city officers as books of reference. W. S., Sr.

ARTHUR LINWOOD REEVE, M.D.

Dr. Reeve was born forty-five years ago and died in Brooklyn, N. Y., January 4, 1916. His medical education was received at the Long Island College Hospital, graduating in the class of 1896. During his professional life he was a member of the Medical Society, County of Kings, from 1898-1900, and the Associated Physicians of Long Island from 1902-16.

He is survived by his widow, Florence W., and a daughter, Helen Reeve. W. S., Sr.

EDWARD CHARLES KROOS, M.D.

Dr. Kroos was born in New York City, November 24, 1862, and died in Brooklyn, N. Y., December 30, 1915. He received his medical education at the University of New York, where he was graduated in 1892. During his professional life he was physician to the Central Hospital, and Manhattan Hospital; a member of the Medical Society, County of Kings, from 1895-1915; American Medical Association and the Brooklyn Medical Society, 1895-1915. W. S., Sr.

THARES JAMES DUKESHIRE, M.D.

Dr. Dukeshire was born in Brooklyn, N. Y., March 16, 1886, where he died February 8, 1916. He was the son of William F. Dukeshire and Clara T. Tiner. He was educated in the public schools and Erasmus Hall High School. His medical education was received at the Long Island College Hospital, graduating in the class of 1909. This was followed by a year as interne in the same institution. He was physician to the Polhemus Clinic and a member of the Associated Physicians of Long Island from 1914-16. He is survived by his widow, Jean Hay Smyth and two children. W. S., Sr.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY

The regular meeting of this Society was held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, on Thursday, June 3, 1915.

The President, JAMES C. KENNEDY, in the Chair.

Case Reports:

1. (*a*) Appendicitis in Undescended Cecum. Three cases.
   (*b*) Fracture of the Styloid Process of Radius.
   Louis Stork, M.D.
2. (*a*) Penetrating Wound of Abdomen. Patient.
   (*b*) Intussusception.
   (*c*) Fracture-dislocation of Spine. Recovery. Patient.
   E. B. Wilson, M.D.
3. (*a*) Recurrent Sarcoma—six years duration—Patient.
   (*b*) Metastatic Lung Abscess following Acute Duodenal Perforation. Patient.
   (*c*) Metastatic Lung Abscess following Acute Appendicitis.
   (*d*) Conservative Treatment of Compound Dislocation of Ulna and Fracture of Ulna.
   John Linder, M.D.
4. (*a*) Colles' Fracture. Operation. Patient.
   (*b*) Cases of Ectopic Gestation. Rupture of Fallopian Tube.
   L. W. Pearson, M.D.

Penetrating Wound of Abdomen. Patient.

E. B. Wilson, M.D.

With your permission I will take the case of penetrating wound of the abdomen first because this child would like to get home early.

Margaret M., age five, entered the Coney Island Hospital on the afternoon of March 1st with this history:

While playing on the stone stoop of a house she jumped from one step to the other and missed her footing, coming down upon an iron-spiked fence, on the right side of the abdomen. I happened to be in the hospital at that time and saw her within a half hour from the time of her accident and found on the right side of the abdomen, to the right of the rectus, a loop of intestine about six or eight inches long which was of a dull mahogany color. This little girl had vomited several times previous to admission, although it was less than a half hour from the time of the accident, and gave evidence of strangulation of the intestine. Without any previous preparation she was taken to the operating room and I think that the way she was prepared had a good deal to do with the recovery of the child. First, the abdomen was gone over with fifty per cent tincture of iodin right up close to the margin of the wound around the intestine, no attempt being made at that time to do anything to the intestine itself; then, starting in the middle of the loop, continuous irrigation of hot saline was played upon the bowel, going from the centre out toward the periphery and gradually working down toward the underlying abdominal wall. It was impossible to get the finger into this wound to reduce the bowel, so a counter opening was made near it over the sheath of the right rectus, such as for an appendix operation, and then working from that over to the strangulated loop of bowel. On getting inside of the abdomen we found small pieces of dirt. A large quantity of warm saline was irrigated into the abdominal cavity (in fact, there were several gallons of the solution), the intestine was then replaced and the wound closed tightly with the abdomen full of saline. From that time on the child never had a particle of trouble. She is now as well as she ever was.

Intussusception.

E. B. Wilson, M.D.

The second case is a case of intussusception which offers several rather interesting features. The history is that the patient, M. B., aged thirteen months, entered the Coney Island Hospital on April 8th, 1915. On the previous Wednesday the patient had started to have a diarrhoea and on Thursday began to cry. The easiest position seemed to be with the limbs drawn up. An injection was given and a normal green stool resulted. Then he was given castor oil with no result. He was given an injection, the only result being red blood. After that there were two more discharges of bright red blood. For this reason the patient was sent into the hospital with a diagnosis of intussusception. On receiving word from the house surgeon that he could feel a mass down in the right lower portion of the abdomen, I went down to see the child at ten o'clock at night and found him on a table in one of the dressing rooms apparently in a great deal of pain. On palpating the abdomen in the region of the appendix I could get a mass about as large as a small orange. While manipulating this, all at once there was a gurgle which could be heard on the other side of the room and the mass which I had felt very plainly disappeared, the child almost instantaneously stopped crying and inside of ten seconds was fast asleep on the table, apparently having full relief from his pain. For some reason, we decided that we had better open up the abdomen, probably thinking of the frequent recurrence after spontaneous reduction of that sort; so the child was taken to the operating room, a right rectus incision made, and the fingers passed down exploring the abdomen, but no tumor could be felt. The only thing that seemed different from the usual was that the head of the cecum and about four or five inches of it seemed to be thickened and rather doughy, as if there was considerable quantity of soft fecal material there. The small bowel directly under the incision, where the tumor had been felt before, also had a rather peculiar feel, so this intestine was the first that was hooked up and presented a rather peculiar appearance. That bowel was flat, corrugated and ridged, as though the two surfaces had been pressed tightly together. At one point there was a well-marked evidence of constriction, a white line around the bowel. On the proximal side of this constriction the bowel was apparently perfectly normal, shiny and smooth, and on the other side of the constriction the bowel was apparently perfectly normal, shiny and smooth, and on the other side of the constriction it was flattened out. It seemed as though this had been the point of the intussusception. I picked up this bowel and began to draw it out toward the head of the cecum, and drew out about fifteen inches of it. At that point the child, who had been under a very high anesthetic, began to strain so that a hot compress was put over the intestine which was out, and the child got back under the anesthetic. When this was accomplished I put my finger in the wound and was very much surprised to find that I had a large mass which felt a good deal like the mass that I had felt previous to the operation. I found that this was the head of the cecum, so I drew this out and found a marked intussusception of ten inches of the ileum and four inches of the head of the cecum with the appendix. I was very positive that this tense condition was not present at the first part of the operation. It was rather puzzling to see a thing of that description and I could hardly expect that it would recur so quickly. After I had taken out this intussusception I was well satisfied that this was not of recent origin, but had been there all the time, the only difference being that it had not been tense; it had been practically latent, because the appendix, which was doubled over on itself for the last inch of the tip, was strangulated and very friable and presented the appearance of an appendix which had been subject to a very acute inflammation. The intussusception was reduced without any great trouble and a few stay sutures were put in and the meso-cecum held down to prevent, if possible, any recurrence, and at the same time a rather thick band around the head of the cecum was ligated and cut and the appendix removed. The wound was closed with interrupted layer-to-layer sutures and the child made an absolutely uneventful recovery.

The interesting thing to me is: Is this not an explanation for those cases which so frequently are apparently reduced without operative measures, and then a short time afterward there is a recurrence of the intussusception? It seems as though that is well illustrated in this case.

Fracture-Dislocation of Spine. Recovery. Patient.

E. B. Wilson, M.D.

The third case is a case of fracture-dislocation of the spine, recovery and patient.

HISTORY: T. McN., aged fifty-seven. On February 27th, 1915, while ascending a ladder, this man, who weighs over 180 pounds, was at the top of the ladder leading from a concrete floor to a loft. As he neared the floor above, the ladder slipped, but he was able to hold on long enough for the ladder to fall to the concrete floor and he dropped after, falling across the sides of the ladder on his back. He was helped home and I saw him at midnight. He was complaining of a great deal of pain in his back and left hip. He had no paralysis. On examining the back I found a very distinct knuckling about the tenth dorsal vertebra. I made a tentative diagnosis of a partial dislocation of the spine and not knowing whether this would go further, I made an immediate attempt to reduce it by making traction above and pressure over the spine and pulling below. This deformity disappeared. A plaster of paris jacket was put around him so as to hold him very rigid. He also had a complete fracture of the posterior superior spine of the left ilium. For several days after the accident he passed a great deal of blood in his urine and expectorated bloody material. One of the peculiar things, with the fall that this man had and the marked trauma, was the fact that there wasn't a mark on his body anywhere. He now has a cast on, it being temporary until his modified Knight brace is completed. The greatest difficulty that I have experienced is to get him to realize that he has to keep quiet in order not to do more damage.

I wasn't able to get an X-ray picture of this man until almost three months after his accident. There was no electricity in the house so I couldn't bring in a portable machine, but about the third month Dr. Eastmond made two X-rays which show a fracture through the body of the tenth dorsal vertebra running from the lower portion of the body anteriorly upward and backward to the upper posterior angle. There was also a fracture of the posterior arch of the ninth dorsal in the spinous process, and the plates, which are not particularly clear, show under very subdued light what Dr. Eastmond thinks is also a slight fracture of the body of the ninth dorsal vertebra. The general position of the spine is excellent. There is very little wavering in the line as you look at it from side to side and this man apparently is going to be one of the few that have a perfect recovery and I expect that he will be able to get back to work before very long.

Recurrent Sarcoma—Six Years' Duration. Patient.

John Linder, M. D.

Patient, R. S. F., age thirty-four. Admitted to the Jewish Hospital, October 8th, 1909, presenting symptoms of fibroid uterus and chronic peritonitis.

Previous Illness: The patient had typhoid at seventeen. Her menstrual history began at sixteen and was always regular until shortly before admission when she menstruated more profusely, lasting six days.

Marital History: She has been married fifteen years; has five children, the oldest fourteen and the youngest eight, normal deliveries.

Present History: Dates back one year when the patient suffered from pain and discomfort in the lower abdomen, more marked on the right side, and irregular and profuse menstruation.

Urinary Examination: Cystoscopy, bladder and ureters normal; urine from right kidney clear with a few shreds; urine from left kidney cloudy with many shreds.

Laboratory Examination of Urine: Right kidney many pus cells and a few red blood cells; left kidney no pus cells, many red blood cells.

Operation by Dr. William Lindner, October 10, 1909. Operative Findings: Fibroid uterus, bilateral chronic salpingitis; supravaginal hysterectomy, bilateral salpingectomy and right oophorectomy and appendectomy; convalescence smooth and uninterrupted; patient discharged October 27th, 1909.

The hospital records do not show that an examination of the specimen was made.

This patient gained in weight and enjoyed good health until 1912 when she began to complain of a constant dull pain in the right lumbar region, at times becoming quite sharp and lancinating, with attacks of chilliness and fever. The urine during these attacks was quite dark, the patient states.

The patient consulted Dr. William Linder and was admitted to the hospital February 23d, 1912.

History on Admission: About five days before admission the patient was seized with sharp lancinating pains in the right lumbar region extending to the back and abdomen, attended witht chills and fever and dark colored urine. Temperature on admission, 101; pulse 105; respirations 25. X-ray examination was negative for stone. Urinary examination shows the presence of a few pus cells, but no red blood cells on three urinary examinations.

Physical Examination on Admission: Abdomen—Lax, tympanitic, slight rigidity on the right side; a large mass palpable in the lumbar region extending forward into the abdomen; the mass is ballatable; no tenderness in costovertebral angle; mass descends with deep inspiration; tenderness in the right hypochondrium.

Operation February 26, 1912: Lumbo-inguinal incision; kidney found very adherent; greatly enlarged with a very short pedicle; ureter and vessels separately ligated and kidney removed; it was about three times normal size and its upper half was the seat of a new growth.

Macroscopical Appearance of Sarcoma: Pathological report, spindle-celled fibro-sarcoma.

The patient made a smooth recovery and was discharged March 24th, 1912.

This patient continued in good health, gaining weight up to her admittance to the hospital for the third time on May 29th, 1914. On admission she presented a tumor about the size of a grape fruit arising from the body of the scapulae.

X-ray Diagnosis: Sarcoma of scapula.

Operation: Removal of entire scapula below the spine with all its muscular attachments and growth.

Pathological Report: Spindle-celled sarcoma.

At the present time the patient presents another recurrence at the site of the former nephrectomy. The tumor extends from the right lumbar region forward to anteriorly; when first seen it was fixed and immovable. The patient was advised to resort to other than operative treatment because of the immobility of the tumor. For the past two weeks she has been receiving increasing doses of Coley's serum with marked diminution in the size of the tumor. The tumor is also much more movable. The patient's general condition has remained good throughout with increase in weight at the present time.

Metastatic Lung Abscess Following Acute Duodenal Perforation. Patient.

John Linder, M. D.

Patient A. L., age forty-five, Russian, plasterer, admitted to the hospital February 19th, 1915, March 14th, 1915.

Family History: Negative.

Previous History: For the past six weeks the patient has had an uncomfortable feeling in his abdomen, at times pain accompanied by gaseous eructations and heart burn. The pain usually came on after the evening meal or during the night. He never vomited. The bowels were constipated. There has been no loss in weight. The foregoing symptoms have never been severe enough to require the services of a physician.

Present Illness: The present illness began suddenly while at work, about six hours before admission, with severe cutting pain in the mid-abdomen, nausea; no vomiting. The patient felt like fainting. During this time the pain became almost unbearable. The entire abdomen felt sore. After being put to bed he became nauseated and vomited about two ounces of sour fluid. He felt very weak and was bathed with cold perspiration.

Physical Examination: Patient in shock; acutely ill; abdomen distended; boardlike rigidity over the entire abdomen; marked peritoneal reaction and tenderness; liver dullness not obliterated; presence of shifting dullness in flanks.

Operation same evening of admission.

Operation: Upper right rectus incision. On opening the abdominal cavity a large amount of gastric and duodenal contents was found in the peritoneal cavity; perforation on the superior posterior surface of the first portion of the duodenum (large enough to admit a lead pencil), being the centre of a callous indurated ulcer; closure by purse-string was not practicable because of the induration surrounding the perforation and extreme friability of the surrounding tissue. The area, therefore, was infolded with the adjacent duodenum and covered over with an omental graft; then a posterior gastroenterostomy with the clamp method was performed, stab wound in the lower hypogastric region and glass tube drainage.

Post-operative Course: For the next ten days quite uneventful. On the twelfth day the sutures were removed and we found deep infection of the wound and liberated about two ounces of pus. On March 7th the temperature rose to 103 degrees Fahrenheit. The patient developed a cough and physical signs of fluid in the chest. On the 10th of March fluid from the right chest was aspirated and the patient was discharged on the 14th. On the 16th of March, while the patient was in bed, he was seized with a severe coughing spell with evacuation of large quantities of most offensive mucus and pus.

The interesting features of this case are:

1. The existence of a chronic indurated ulcer of long standing not attended with symptoms.
2. Acute perforation while at work.
3. The necessity of performing a posterior gastroenterostomy at the primary operation.
4. The development of a lung abscess with its spontaneous cure, by rupturing into a bronchus, and
5. The presence of right pleural fluid which was secondary to an existing lung abscess.

Metastatic Lung Abscess Following Acute Appendicitis.

John Linder, M. D.

History: Patient W. L., age thirty-eight, Austrian, admitted to the service of Dr. Louria at the Jewish Hospital, April 8th, 1915.

Family History: Negative.

Past History: For the past seven or eight years the patient has had chronic cough with expectoration of small quantities of mucus. He never expectorated blood. He has lost considerable in weight. Smokes twenty-five or thirty cigarettes daily.

Present Illness: The present illness began seven weeks ago with an acute attack of general abdominal cramps with localization in the right lower abdomen with vomiting. This was treated by local applications with an ice bag. The pain and discomfort in the right lower abdomen gradually disappeared after several days. Following this the patient was suddenly seized with sudden severe lancinating pains in the left chest. The pain did not radiate. Following this the patient had chills and fever and marked dyspnea and much cough and blood-streaked sputum and marked prostration and weakness.

Physical Examination: Patient markedly emaciated, dyspneic, presenting a severe anemia; very ill. Examination: The left chest shows signs of air and fluid. Aspiration revealed pus. Sputum examination was negative to tubercle bacilli. Temperature ranging from 102-104; pulse ranging from 120-140; respirations ranging from 40-50. Blood count 24,000 with 95 per cent polys.

On the third day after admission the patient was transferred to the surgical service. On account of the patient's very poor condition and marked dyspnea, a thoracotomy was performed under local anesthesia, a Wilson tube inserted and large quantities of pus, very foul-smelling in character, were evacuated. The patient made a very uninterrupted recovery, having gained about twenty-five pounds in weight, and was discharged on May 19th, 1915.

On the 25th of May I saw the patient at his home. He was again taken acutely ill with general abdominal pains centred about the umbilicus, with localization in the right iliac fossae. The patient vomited once. Examination showed marked rigidity over the right rectus, marked sensitiveness and peritoneal irritations. He was admitted to the hospital and operated upon the same evening and through a gridiron incision we removed a gangrenous appendix. The patient is at present in the hospital making a smooth recovery.

The interesting feature about this case is that seven weeks before his admission to the hospital the patient suffered from an undoubted attack of acute appendicitis which subsided in a few days and during the period while still in bed, he suddenly developed an acute lancinating pain in the left chest which terminated in a pyo-pneumothorax, making a complete recovery, and six days after his discharge he was again seized with an attack of acute appendicitis, this time terminating in rapid gangrene.

Conservative Treatment of Compound Dislocation of Ulna and Fracture of Radius.

John Linder, M. D.

In the fourth case, the patient was cranking an automobile when it backfired and he sustained a compound dislocation of the ulna and a fracture of the radius at the junction of the lower and middle thirds. The ulna artery was severed and projected about a half inch out of the wound. This was ligated immediately and there was no bleeding. I took him upstairs immediately to the operating room and iodinized the surface around the ulna, replaced that and put on a temporary splint and did not do anything more until there had been absolute union of the compounded dislocation, left the radius fracture in the position that it was in until ten days elapsed, when it was entirely healed, and then re-position or alinement of the radius with a very excellent recovery.

Colles' Fracture. Operation. Patient.

L. W. Pearson, M.D.

I wish to present a case of a fracture tonight that I have submitted to operation and the result is so good that I wanted to present the patient to you.

History: Patient, Mr. Thompson, age fifty-three years.

Personal History: Uneventful, until December 9th, 1913. At that time he sustained a fracture of his left arm. I saw him on the following day and diagnosed a Colles' fracture. However, as he could move his fingers he considered my diagnosis disproven and went on his way. Two days later, because of the disability, he sought advice at a hospital in this city. Efforts at reduction were made and the limb was put up in plaster of paris. A subsequent x-ray showing malposition, new efforts were made to reduce the displaced fragments and later a third attempt was made, which was unsuccessful. It is my opinion that he refused an anesthetic. He was under the observation of skillful surgeons at this institution for four months. He then came again to my office. The left hand was extended and permitted of very little wrist flexion. The fingers allowed no flexion. The hand was useless. It had been massaged and cared for diligently. It was plainly evident that the fracture had never been reduced. On March 9th, with the assistance of Drs. Sheehey and Wachsman, we operated upon him at his home. An incision two and one-half inches long was made along the surface of the radius over the site of the displacement. The ends of the fractured bone were overlapped and fused together. They were chiseled apart. The contracted tendons of the muscles prevented opposing them by traction. About one inch of the bone was removed and the freshened ends were drilled and held together bv sutures of kangaroo tendon. The skin wound was sutured with catgut and the limb dressed and put up in splints. The wound healed per primam. Flexion of the fingers, passive motion and massage were early begun and he returned to work March 28th.

In this case the disability was so complete after four months, the fingers being in an absolutely extended position and the man being unable to flex them at all, that I felt this was one of those cases where we were fully justified in resorting to operative procedures and I wanted to show you the patient tonight. He does very hard work and his hand is very useful.

Ectopic Gestation. Rupture of Fallopian Tube. (Two Cases.)

L. W. Pearson, M.D.

Under ectopic gestation I intended to report two cases of a rupture of the tube of an ectopic gestation, and both of these stimulated a perforation of an ulcer of the stomach or duodenum. The one case that I have here is that of Mrs. D., age thirty-seven years, married, had two children, the last one twelve years ago. She had an abortion one year ago. Her menstruation has been regular, but she missed a period in January. On February 14th she was curetted by Dr. Fritz for what was supposed to be an incomplete abortion. The hemorrhage ceased and she felt better, but had symptoms of nausea and disgust of food and had symptoms of pregnancy. On February 21st she was examined by Drs. Fritz and Wachsman under anesthesia. A mass was found about the right fallopian tube and was diagnosed as either an ectopic gestation or a cyst, and immediate operation advised. A consultant from New York was called in and advised delay. Four days later, at 11:00 a. m., she was suddenly taken with sharp pain over the right liver and epigastrium, vomiting and marked shock. She became very anemic; pulse 150; temperature subnormal, 96. I saw the patient at 1:00 o'clock at the Sunshine Hospital, about two hours after the attack. The abdomen was very rigid. She had pain in the epigastrium and liver, which was very marked. There was no pain over the lower part of the abdomen and no pain over the pelvis; in fact, nothing that related to the pelvic region. The patient was in collapse. A vaginal examination revealed the presence of a mass on the right side of the abdomen, which was markedly tender. I diagnosed a ruptured tube and operated at once with the assistance of Drs. Fritz and Wachsman. On opening the abdomen free blood gushed forth from the abdomen. The right tube was found to be ruptured and was clamped near the pelvic wall. That tube was taken away and a fetus, about one month or six weeks old, was found free in the abdominal cavity. The patient recovered.

I report this case for the sake of diagnosis. The diagnosis was made on account of the previous history and symptoms of pregnancy, missing of one menstrual period and a menstrual flow about eleven or twelve days before, then up to the time of the operation the symptoms all referred to a ruptured ulcer of the stomach or duodenum, all the pain being in the epigastric region and over the right liver and being extremely severe. The entire abdomen became markedly tender, but the rigidity was most marked in the epigastrium, and as we descend toward the pelvis the rigidity was much less marked and there was absolutely no pain in the pelvic region. The history, marked shock and anemia caused me to diagnose a rupture of an ectopic gestation, a rupture of the tube. As a rule, we don't find very much shock within two or three hours after the perforation of an ulcer of the stomach and duodenum, while in a ruptured ectopic shock commences immediately.

Appendicitis in Undescended Cecum. Three Cases.

Louis Stork, M.D.

Miss S., aged nineteen, has always been severely constipated and occasionally suffered agonizing pains at her menstrual periods. At times has complained of nausea and pain in epigastric area which she ascribed to "indigestion"; this pain would shift to upper right lumbar region.

Four days before admission to hospital she began suffering with severe pain in upper right lumbar region with slight tenderness in same area, some nausea but no vomiting nor rigidity. Her bowels had moved with a cathartic.

Temperature, pulse, respiration and urine normal.

Operation: Tubes and ovaries normal.

Cecum found in upper right lumbar region, the extreme tip curving in on itself. The appendix was found retro-cecally and covered with thin adhesions which were easily separated to its tip which was found strongly adherent, its separation causing profuse bleeding. Hemorrhage was controlled with packing. As soon as appendix was freed, cecum resumed its normal, *i. e.*, its horizontal position.

Patient made an uneventful recovery.

The only reason for reporting this case was the peculiar recurving of the cecum as though a previous inflammation of the appendix had anchored the cecum and kept it from descending.

Miss S., aged thirteen, has been severely constipated. Last summer had a vomitting attack associated with slight pain in epigastric region which was ascribed to "biliousness" with recovery after a dose of castor oil.

On May 3, these same symptoms recurred and subsided after a few days of administering home remedies.

On May 11, one week after last attack, she was suddenly seized with sharp cuttings pains in abdomen associated with severe vomiting, the stomach rejecting all food. The bowels had been emptied just preceding the attack with castor oil.

Pain was located in the upper right lumbar region, a point of tenderness being located about one in. to one and one-half in. above the line from umbilicus to ant.-sup. spine. On bi-manual examination in upper right lumbar region the tips of the fingers reaching to a line drawn perpendicularly from the tip of the 11th rig, distinct tenderness was elicited.

T-100 P-120 R-28

Operation May 12. Right rectus incision, its mid-point about opposite umbilicus. Cecum extended about two inches below edge of ribs. Appendix found to inner side of cecum, tip pointing upward, and removed. It contained about dram 2 of pus.

Mrs. W., aged twenty-five, has not had any previous attacks of appendicitis. Is severely constipated.

On Feb. 5 complained of pain in epigastric region, omitting accompanying same for two days. The pain shifted to right lumbar region, radiating to hypogastric region. Increased frequency of urination.

These severe pains let up suddenly and she felt quite well.

Admitted to hospital on Feb. 10 (five days after the original attack). T-100 P-90 R-20.

Examination revealed a moderately tender spot one inch to one and one-half in. above line from umbilicus to ant.-sup. spine, a little external to semilunar line. Distinct tenderness in upper right lumbar region extending over to median line, and even more marked posteriorly in lumbar region.

The urine contained R.B.C. and leucocytes. (Patient stated that her periods had begun two days previous and that she had always had dysmenorrhoea two days preceding them. No catheterized specimen could be obtained.) A leucocytosis of 23,000.

Operation: Right rectus incision, mid-point on level with umbilicus dense adhesions separated, cecal tip found about three inches below edge of ribs. While freeing adhesions to inner side of cecum, an abscess cavity containing a fecal concretion and about one ounce of pus, was opened. Appendix could not be found easily, the walls of the cavity being smooth and dense. As there was some danger of soiling the general peritoneal cavity, the search was not continued, and the appendix left to be removed at some future date. After a rather lengthy drainage, wound healed.

Fracture of the Styloid Process of Radius.

Louis Stork, M.D.

Mr. G.: Struck rear end of moving automobile while riding motorcycle and in falling landed on the palm of right hand, receiving a fracture of the lower end of right radius, just below the styloid process. He landed on the palm of the hand. The mechanics of the production of such a fracture seemed unexplainable. The X-ray plate shows the location of the fracture.

Recurrent Sarcoma—Six Years' Duration. Patient.
Metastatic Lung Abscess Following Acute Duodenal Perforation. Patient.

John Linder, M.D.

Dr. William Linder, in discussion, said:

"I want to call your attention to a few points. In this case of sarcoma there is no doubt in my mind but that the fibromyoma must have had some degenerating sarcoma somewhere. Unfortunately the specimen did not find its way to the laboratory or the gross pathology was so evident that the pathlogist did not subject it to microscopical examination. I have known that to happen. The chills and fever that occurred in this case at the time that she presented herself with the kidney condition is significant in spite of the fact that there were only a few blood cells found and the x-ray diagnosis was negative as far as stone was concerned. I have found that to exist frequently in degenerating sarcoma and we must not lose sight of that fact, particularly when we have a blood count which does not correspond to infection.

"A point as to the infection: the pedicle was very small, and I attacked and ligated the pedicle first without removing the kidney from its capsule. In that case I was very anxious to separate the ureter with the kidney in place."

Here Dr. Linder went on to say, in explaining the technique pursued in this case, that he "covered the forceps and passed a double ligature, one of which grasped the ureter and the other the forceps and put a clamp in place, and that the clamp slipped on account of the tension." Continuing, he said:

"This is an important technical procedure in growths. in sarcoma as well as in nephrectomy, so much so that they recommend it in verv large tumors of the kidney; and it is further recommended that after closing the abdomen the patient be turned over in the lumbar region in order to prevent metastasis, and I believe that that is a very important point and I am inclined to follow that procedure in future.

"Another interesting feature is that with the chills and fever and negative calculus there was bloody urine and with the chills and fever and hematuria a palpable mass. We ventured a diagnosis of malignant tumor of the kidney and it was substantiated.

"The sarcoma appearing in the scapula; it is interesting that there has been no recurrence there, although the entire scapula was not removed in order to save the motion of the arm. We just left the spine of the scapula and there has been no recurrence. The recurrence is in the tissue in front of the ileum.

"There is no question in my mind but that Coley's serum has improved this condition. Since using it there is one symptom that has disappeared. The patient told me on coming here tonight that she had been unable to sleep at night on account of the pain which she experienced, but that ever since Coley's serum has been given she has been able to sleep at night and feels much better.

"There are a few cases that I know of where Coley's serum has worked miracles. I remember one particular case of "rheumatism" in the shoulder in a druggist in East New York. In that case a diagnosis of sarcoma was made and Coley's serum was made and the tumor, which was as large as a grape fruit, disappeared as ice does under heat. This man was subsequently operated upon to remove fragments of the scapula. Then again there are other cases in which I have tried it with no result at all. In one particular case which I recall of a sarcoma of the leg, Dr. Coley was very persevering, but amputation had to be finally resorted to.

"In this case tonight I am convinced that Coley's serum is going to be beneficial if its use is persisted in, because it is a good sign if you begin to inject the serum and the tumor becomes soft in the third or fourth injection, and in these cases I believe in starting in with a half or a quarter and pretty soon giving a sufficient injection to produce a reaction. I believe, if the patient can stand it, in injecting it into the tumor and getting a reaction. I believe Dr. John is using three minims with but very little reaction, whereas at first a half a minim produced a severe reaction.

"The second case which Dr. John reported is extremely interesting and brings up the important point as to whether a primary gastroenterostomy should be performed in the presence of a perforating duodenal ulcer. I have been in the habit of doing it except where the duodenum is so crippled as to interfere with drainage of the stomach and there is no other alternative, but ordinarily if I can plaster the duodenum up and the continuity of the gut is not at all interfered with, I do not at that time do a gastroenterostomy, and I have had but one case out of quite a few, that came back for subsequent partial obstruction of the stomach."

Metastatic Lung Abscess Following Acute Appendicitis.

John Linder, M.D.

Dr. Thomas B. Spence, in discussion, said:

"There is one point which the doctor brought up which interested me. He said he used local anesthesia for thoracotomy on account of the bad condition of the patient. I want to commend that method of attack and wish to say that I would never open a chest for pus in any other manner. I have had the misfortune to see three cases of empyema of the thorax die from anesthetics. I would not, under any circumstances, allow anybody to give an anesthetic to an empyema patient of mine. It is very easy to get along without it. The three cases I have in mind were anesthetized under the hands of three different men. One of them was a case that I anesthetized myself many years ago. Another case was that of a young man who had been perfectly well up to the time that he was taken ill and there was no reason why he should not have gone through an operation perfectly well, but after he was under the ether he ceased to breathe and never breathed again. He would have been alive without any question if he had had local anesthesia used.

"I do not think that one should pick out very bad cases for this. It should be a universal rule that a local anesthetic be used in all of them."

Dr. James M. Downey, in discussion, said:

"I fully agree with Dr. Spense in the use of local anesthetics, especially in empyema cases. I have operated upon six in the last few months and it is a great pleasure to operate on them under this particular anesthetic. Formerly we had to resort to various methods under considerable apprehension and fear but I can say that local anesthesia is perfectly safe and one can work with the usual care and precision, the patient not suffering the least bit of discomfort during the entire operation."

Dr. John Linder, in closing the discussion, said:

"In answer to Dr. Graham's question I wish to state that Coley's serum is obtained by Martha somebody. If the doctor will call me up I will give him the full name and address.

"With regard to local anesthesia for empyema I would say that that has been our practice for the last two years and very rarely, only in exceptional cases, do we administer a general anesthetic."

The Use of Gum Rubber in Abdominal Surgery. Illustrated by Kodachrome Pictures.

William B. Brinsmade, M.D.

Four years ago I happened to see in the course of three days three different cases where I thought the complication of disease was due to the packing of the intestine with gauze pads, all moist gauze. The three cases were these: One of them I operated upon myself, a young woman suffering with an acute attack of appendicitis. The anesthetic was badly given and there was considerable difficulty in retaining the intestines in the abdomen to such an extent that three gauze sponges were used to hold them in while the appendix was removed. She had a stormy convalescence with considerable pain. After convalescence the young woman entered upon a period of obstinate constipation, terminating one year later in an attack of acute intestinal obstruction. I was called to see her one Sunday night. It was necessary to resect some inches of the ileum and it was apparent at the time of the operation that the constriction had taken place in the locality where the gauze sponges had been placed.

Two days after that I saw a case with a friend of mine which had been operated on five days previously for an attack of appendicitis during the interval. It was a simple operation, but he had used sponges for holding the intestine out of the way and the ileum was plastered up against the caput and ascending colon. The adhesions were apparently firm enough to make a constriction causing intestinal obstruction. The boy died.

The next day I was called upon to operate a case of hour glass contraction of the stomach and a prolapse of the transverse colon which showed in the x-ray picture. On opening the abdomen the stomach was found to be perfectly normal, but it was discovered that the omentum was pulled down into the pelvis. This woman, nearly a year previously, had had a suspension of the uterus. It was done while she was lying flat on the table, not in the Trendelenburg position, and gauze sponges were used, in all six sponges, according to the records, to hold the intestines back from the field of operation. The operation took only twenty minutes, but it was followed by a series of symptoms corresponding to the well-known gastric syndrome. On freeing the uterus from its attachments the stomach assumed the normal position, the colon was lifted into place easily and the woman got well and has remained well to this day.

With those experiences in mind we stopped using gauze sponges in the abdomen, excepting where absolutely necessary, and substituted in their place a piece of gum rubber. The gum rubber is unhandy to use, it slips and gets out of place easily and is very annoying to the operator, but it can be placed against the intestine and moist gauze pads can be placed against the rubber so as to hold the entire mass out of the way and almost any operation I believe can be performed with it, thus protecting the intestines from contact with the gauze sponges, which we believe cause an irritation to the peritoneal coats of the intestine and led to adhesions. I now believe these adhesions have a great deal to do in causing the after pains following most abdominal sections.

This winter I decided to see what some operations on dogs would disclose. We operated eight dogs and I have proved, to our satisfaction anyway, that gauze sponges do a great deal more harm inside the abdomen than a piece of gum rubber does.

These pictures were very kindly taken for me by Dr. Beers and I show them as much for the pictures as anything else.

This dog had a double ovariotomy and hysterectomy performed on her and the other dog had the same operation on the same day and they were killed on the eighth day, with the following results: At the autopsy the omentum is evidently attached here to the parietal peritoneum. All along on this side the small intestines are held up in a coil by the adhesions which have taken place and there is an adhesion there which constricts the rectum to a considerable extent. In the other dog, on the contrary, you will see (they were suspended by the back legs so that the pictures could be taken) that the small intestines have dropped up against the duodenum. The abdominal parietes are absolutely clear of any adhesions. The rectum is clear, with no adhesions, and the only place where there are any adhesions is in that spot there where there was a catgut knot remaining at the time of autopsy.

This is done by the new Kodachrome process which is not yet on the market. I believe Dr. Beers is the only one in this city having a license to use it.

On this dog an entero-enterostomy was done, the field of operation isolated with gauze sponges just as you would do in a human subject, and we used the same instruments and the same gauze and everything else. None of the dogs became septic. They were all perfectly well until the time they were killed, except one that died a few hours after operation, and this, to me, is extremely interesting. The coils of small intestine there are all bound up in a mass of adhesions. He was, however, running around and jumping around and eating and they were not doing him any harm. That, of course, is the liver. We cut out some ribs there to make a contrast for the photographer so that he could see what he had to deal with. There is a distended bladder.

The use of rubber tissue is not at all original. I saw Dr. Jewett use it seventeen or eighteen years ago in his clinic.

We have found that by using it in the upper abdomen you can isolate things and put your gauze pads on top of the rubber and do your work very nicely.

In 1912 while abroad in six different clinics where we saw abdominal and gynecological operations dry sponges were used. There was one clinic that we saw this year where the man used a saddle bag for his sponges. I wouldn't like to be quoted as saying it, but I think he had twenty-five yards of gauze, and during the operation the whole twenty-five yards of gauze went in and out of the woman's abdomen.

In the other dogs we operated the experience was practically the same.

Dr. George D. Stewart, at my request, had similar experiments carried on at the New York University in his laboratory, where they did nine eviscerations of the small intestines, wrapping the intestines (?) in gauze in some cases and in gum rubber in others. The results with rubber were far superior to results with gauze pads.

I think it has an advantage in the upper abdomen also.

Further experiments on gall-bladders were cited by the doctor, which he explained were not very fair experiments.

Bureau of Chemistry, U. S. Department of Agriculture:

"The spurious aspirin is a mixture of either calcium phosphate and starch, cream of tartar and citric acid with some alum; or milk sugar, starch and calcium acid phosphate."—(From **N. Y. Department of Health "Weekly Bulletin"**, Nov. 6, 1915)

By Specifying

Bayer-Tablets

OF

Aspirin

(5 grs. each)

You Avoid Counterfeits

The trade-mark **"Aspirin"** (Reg. U. S. Pat. Office) is a guarantee that the monoaceticacidester of salicylic acid in these tablets is of the reliable **Bayer** manufacture.

Be Sure of Your Aspirin

"Recent seizures in various cities of the country of numerous quantities of spurious aspirin make it important that the druggist should assure himself in all cases of the reliability of the source of his supply."—**Pacific Drug Review,** Feb., 1916.

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MINUTES OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND, JUNE MEETING.

THE Fifty-fifth Regular Meeting of the Associated Physicians of Long Island was held at Westhampton, N. Y., Saturday, June 24th, 1916. The President, Doctor Dudley D. Roberts, presided and there were in attendance one hundred and twelve guests and members. A special train left Brooklyn at ten-thirty with the Brooklyn contingent and took aboard members at various points along the line until the number going this way reached about seventy. Luncheon was served on the train. Most of the others who attended the meeting went in their own cars. The meeting was called to order upon arrival at the Country Club. The reading of the minutes of the January, 1916, meeting was dispensed with, by common consent, as they had been published in the Long Island Medical Journal for March, 1916. The report of the Membership Committee was presented by Doctor Royale Hamilton Fowler, Chairman, and contained the names of one hundred and ten applicants endorsed by the Committee. It was moved, seconded and carried that the Secretary cast one ballot for the election of the applicants, which ballot was cast. The list of new members is as follows:

Proposed by Royale Hamilton Fowler, Chairman:

John F. Meagher . . 961 St. Johns Place, Brooklyn, P. & S., N. Y., 1901
Johann Wilhelm Mock, 328 Central Ave., Brooklyn, Kiel, Germany, 1901
Otto E. Runge . . . . . . 20 Foxall Street, Brooklyn, P. &. S., N. Y., 1914
Gustav Adolf Mausert, 67 Hanson Place, Brooklyn, Giessen, Germany, 1899
Thomas Mortimer Lloyd, 125 Pierrepont St., Brooklyn, Univ. Penna., 1876
William B. Thompson, 1103 Lorimer St., Brooklyn, Queens, Canada, 1891
Onslow Allen Gordon, Jr. . . 71 Halsey St., Brooklyn, L. I. C. H., 1911
Benjamin E. Carmel . . . . . . 364 So. 5th St., Brooklyn, L. I. C. H., 1913
Howard T. Langworthy, 480 Franklin Ave., Brooklyn, P. & S., N. Y., 1911
Caroline Hurd LeFevre, 647 St. Marks Ave., Brooklyn, W. M. C., N. Y., Inf., 1897
Frank Hermance Lasher, 82 Lafayette Ave., Brooklyn, P. & S., N. Y., 1906
John E. Dougherty, Greenpoint Hospital, Brooklyn, Barnes Med., St. Louis, 1902
Julius B. Boehm, Greenpoint Hospital, Brooklyn, Johns Hopkins, 1914
Roy A. Hill . . . . . . Greenpoint Hospital, Brooklyn, Atlanta Med., 1915
William Henry Lohman, 1252 Pacific St., Brooklyn, P. & S., N. Y., 1904

Carl Mueller......743 Bushwick Ave., Brooklyn, Bell, N. Y., 1893
Leo A. Lynch ......906 Lincoln Pl., Brooklyn, Johns Hopkins, 1903
John D. Tierney ....974 Forest Ave., Brooklyn, Cornell, 1911
Frederick Henry MacCarthy ..410 Clinton St., Brooklyn, McGill, 1901
John D. Hamill ....103 Third St., L. I. City, Cornell, 1901
Joseph Phineas Menasse ..592 Henry St., Brooklyn, L. I. C. H., 1906
Frederick G. Weygandt, 645 Bedford Ave., Brooklyn, P. & S., N. Y., 1901
James H. MacIvor ....Port Jefferson, L. I., N. Y. Hom., 1892
John Henry Kohlmann ....546 Pacific St., Brooklyn, L. I. C. H., 1907
Geo. I. Miller ....700 St. Marks Ave., Brooklyn, N. Y. U., 1896
Edward Newton Turkus ....465 15th St., Brooklyn, L. I. C. H., 1913
Hampton P. Howell ..Westhampton Beach, L. I., P. & S., N. Y., 1894
Edward V. McGoldrick, 115 Russell St., Brooklyn, L. I. C. H., 1902
John F. Southmayd ....380 Union St., Brooklyn, P. & S., 1892

Proposed by Martin M. Kittell:

Edward J. Hyland, 186 Shelton Ave., Jamaica, U. & B., N. Y., 1911
Harry Schneider .....165 New York Ave., Jamaica, L. I. C. H., 1905
Francis Gerald Riley, 44 Hardenbrook Ave., Jamaica, Univ. Vermont, 1909
Julius Theodore Kane ......9 Smith St., Jamaica, N. Y. Hom., 1910
George A. Linnehan ...171 Shelton Ave., Jamaica, Georgetown, 1904
A. Ernest Gallant ....Forest Hills, P. & S., N. Y., 1890
Charles Edward Clark ....Hewletts, N. Y. Univ., 1883
David Trumbull Marshall ....Hollis, P. & S., N. Y., 1896
George Louis Sockin ...107 Prospect St., Jamaica, L. I. C. H., 1913
Aquin S. Kelly ..294 Broadway, Far Rockaway, P. & S., N. Y., 1900
Thomas C. Chalmers................Forest Hills, Bell, N. Y., 1897
Garrett K. W. Schenck, 86 Mott Ave., Far Rockaway, P. & S., N. Y., 1901

Proposed by John F. Ranken:

James W. Fox ....418 54th St., Brooklyn, N. Y. Hom., 1904
George H. Ding ....511 75th St., Brooklyn, N. Y. Hom., 1906
William Fawcett Shaw, 320 New York Ave., Brooklyn, N. Y. Hom., 1912
Edwin C. Braynard .....Sea Cliff Ave., Sea Cliff, N. Y. Hom., 1910
John Logan Casselberry, 1213 Hatch Ave., Richmond Hill, Hahn, Penna., 1896
Royal Albert Abbott, 1391 East 21st St., Brooklyn, N. Y. Hom., 1913
John Matthew Hieber, 4 Washington Ave., Richmond Hill, N. Y. Hom., 1906
Sidney E. Smith ....78 Arlington Ave., Brooklyn, N. Y. Hom., 1892
Theodore C. Wiggins, 520 Nostrand Ave., Brooklyn, N. Y. Hom., 1888
Clinton Willis....249 Jefferson Avenue, Brooklyn, N. Y. H., 1892
William J. Quinn ......2436 Cornelia St., Brooklyn, N. Y. H., 1903

Proposed by George Kissam Meynen:

James Gilbert Howard, 17 Bass Ave., South Ozone Park, L. I. C. H., 1910
Bertram L. Cunningham, 1211 Van Wyck Ave., Jamaica, N. Y. Hom., 1913
Timothy J. Flynn, 19 Hardenbrook Ave., Jamaica, N. Y. Univ., 1891
Joseph Z. Biegeleisen, South and Wyckoff Aves., Jamaica, P. & S., N. Y., 1904

William Sanford Bellows, 82 Bergen Ave., Jamaica, L. I. C. H., 1900
Charles K. Belden ....28 Clinton Ave., Jamaica, N. Y. Hom., 1878
William I. Louis, 2122 Jamaica Ave., Brooklyn Hills, N. Y. Elec., 1896

Proposed by Harold Edmonds Hewlett:
A. Lowry Ivins ....Sayville, N. Y. Hom., 1911
James T. Tibbetts, 168 Mineola Boulevard, Mineola, L. I. C. H., 1890
Henry V. Holcomb ....Bellmore, P. & S., N. Y., 1903
David Judkins Dickson ....Woodmere, Miami, Cinn., 1905
Le Mon D. Washburn, Wantagh.....................Albany, 1906

Proposed by Foster Murray:
George Hollis Palmer ....489 Greene Ave., Brooklyn, Cornell, 1907
Marry Emma Potter, 305 Washington Ave., Brooklyn, N. Y. M. C. and Hospital for Women, 1899
Hyman L. Ratnoff ......447 Saratoga Ave., Brooklyn, Cornell 1906
Agustus Pearce Northridge, 1177 Bushwick Ave., Brooklyn, L. I. C. H., 1897
E. T. Randall ....391 Hancock St., Brooklyn, N. Y. U., 1898

Proposed by Harry R. Tarbox:
Robert Howe Gray .....768 Halsey Street, Brooklyn, L. I. C. H., 1909
Henry William Gissel .....1557 69th St., Brooklyn, L. I. C. H., 1908
Jacob Gutman ....867 St. Marks Ave., Brooklyn, Cornell, 1900
Thomas Urquhart Joyce ..700 Union St., Brooklyn, L. I. C. H., 1881
Eugene Paul Harman, 563 St. Marks Ave., Brooklyn, N. Y. Univ., 1896
John G. Glynn ....1634 East 14th St., Brooklyn, L. I. C. H., 1914
Oscar J. Kahn....511 Gravesend Ave., Brooklyn, L. I. C. H., 1913
Patrick Joseph Kennedy, 1766 West 8th St., Brooklyn, Queens, Canada, 1911
Thomas H. Hull ....87 Lee Ave., Brooklyn, L. I. C. H., 1890
Anthony Vincent Higgins, 932 Bedford Ave., Brooklyn, L. I. C. H., 1907
Anthony Hans Hansen ....1830 84th St., Brooklyn, Cornell, 1903
Robert Ernest Kinloch, 283 Franklin Ave., Brooklyn, Albany, 1899
John Cowle Hamilton, 6120 20th Ave., Brooklyn, Vanderliet Uni., 1903

Proposed by William C. Woolsey:
Albert Frederick Ruger Andresen, 889 Union St., Brooklyn, L. I. C. H., 1907
Samuel F. Brothers, 96 New Jersey Ave., Brooklyn, P. & S., N. Y., 1890
H. Sheridan Baketel ....54 Sidney Place, Brooklyn, Dartmouth, 1895

Proposed by Merton Layton Funk:
Eugene Smith Dalton ......694 E. 5th St., Brooklyn, Syracuse, 1908
Nicholas Dobkin ...182 Vernon Ave., Brooklyn, P. & S., N. Y., 1897
George Garthwaite Fisher, 317a Halsey St., Brooklyn, Laval, Canda, 1906

Proposed by Dudley D. Roberts:
Franklin Abbott Dorman ....Orient, L. I., P. & S., N. Y., 1898

Proposed by William Metcalfe Stone:
Anthony Foster de Graffenried, Bell Ave., Bayside, Louisville, 1911
August F. A. Wiggers, 176 Central Ave., Flushing, P. & S., N. Y., 1913
Alphonso D. Rockwell, 370 Sanford Ave., Flushing, Bell, N. Y., 1864

Walther Carl August Steffen, 557 4th Ave., College Point, P. & S., N. Y., 1913

Proposed by Raymond P. Sullivan:
Charles Lucius Stone ......152 Halsey St., Brooklyn, Cornell, 1912
Louis E. Tieste, 55 South Portland Ave., Brooklyn, Dartmouth, 1884

Proposed by S. Lloyd Fisher:
Herbert C. Fett ......593 Carlton Ave., Brooklyn, L. I. C. H., 1913
Augustus Louis Child, 424 Hancock St., Brooklyn, L. I. C. H., 1897

Proposed by Robert Stevenson:
Robert Scrimgeour....752 Carroll St., Brooklyn, L. I. C. H., 1881
Isaac B. Smith ......137 Noble St., Brooklyn, P. & S., N. Y., 1891
Harry Apfel ....327 Pennsylvania Ave., Brooklyn, L. I. C. H., 1908

Proposed by Frederick J. Schweikart:
Denis Edward McMahon, 74 Kingsland Ave., Elmhurst, Univ. & Bell, N. Y., 1908

Proposed by Norman Charles Goodwin:
William Edward Jenner, 229 Stoothoff Ave., Richmond Hill, L. I. C. H., 1889

Proposed by Frank Overton:
Charles White Berry, 572 47th St., Brooklyn, P. & S., N. Y., 1896

Proposed by James Cole Hancock:
John H. Nugent ....Southampton, Cornell, 1914
Harry Ketchner Reynolds, 67 Gates Ave., Brooklyn, U. & B., N. Y., 1910

Proposed by Russell Murray Rome:
Patrick J. Mooney ....132 Kent St., Brooklyn, N. Y. U., 1893
James A. Meara, 101 S. Oxford Street, Brooklyn, Dartmouth, 1889
Willis Morton Gardner, 491 Greene Ave., Brooklyn, L. I. C. H., 1908

Proposed by Edwin S. Moore:
David Myerle......793 Argyle Road, Brooklyn, L. I. C. H., 1882

Proposed by Charles B. Bacon:
Willoughby C. Pendill ....Huntington, L. I., Syracuse, 1913

The Chairman of the Committee on Humanics, Doctor William B. Brinsmade, presented the following report:

Report of the Committee on Humanics.

In accordance with resolutions passed at the last meeting of this association, your committee has organized a naval base hospital unit. It will interest the members to know that by an act of Congress the government has been authorized to use the organization of the American Red Cross for military relief.

Col. Jefferson R. Kean has been detailed to the American Red Cross as Director General of Military Relief. It was suggested with the approval of the surgeon general of the United States Navy that this unit was made Navy instead of Army.

The personnels consist of 105 individuals, ten of whom are physicians, sixty of whom are nurses and the rest untrained hlepers, apothecaries and porters.

The members of this unit agree in time of necessity to go whereever they may be sent within the continental confines of the United States.

The necessary equipment will cost $25,000. I am pleased to announce that this sum has been underwritten. The plan is to purchase the equipment and keep it in storage where it will be available at any time.

Your committee urges every member of the association to connect himself with the reserve corps of the Army and Navy.

The plan is to complete the personnel of this unit and to keep it full all the time by appointing new members as often as resignations and retirements take place. Once organized it will be comparatively simple to keep the compliment full. This is all part of the general scheme of military preparedness which makes impossible the unfortunate errors of the past experiences in the United States.

This report was discussed by Doctor Harris A. Houghton.

Doctor Dickinson spoke as follows concerning the Red Cross Society:

Dr. Dickinson: As Chairman of the Red Cross Committee of Brooklyn Physicians I am newly—and unwittingly—appointed and ill prepared to speak. Like so many of you I feel ashamed of old torpor and indifference and that the time has come for getting information and action. What can we do? We can join. We can get new members as few others can. This activity is far from alluring. Other and attractive activities there are. These are clearly outlined in two Red Cross circulars to be had at 26 Court Street, Brooklyn, entitled "Organization and Activities" (A. R. C., 114) and "Department of Military Relief" (A. R. C., 116). Here are a few clauses from these well-written pamphlets.

"The Red Cross is the only volunteer society authorized to render aid to the land and naval forces in time of war." "Other organizamust act through the Red Cross."

"Except in cases of great emergency the personnel will not be sent to the front, but confined to hospitals in the home country, at the base of operations, on hospital ships, and along lines of communication."

"The A. R. C. is obligated to furnish to the Army and Navy

1. Personnel
2. Supplies
3. Transportation material

"The personnel is divided into three groups:

Class "A," consisting of those of the trained personnel willing to serve wherever needed, in field, hospital, or supply columns, or intelligence sections.

Class "B," consisting of those willing to serve in the home country only, and includes both trained personnel and others ready to undertake duties hereinafter specified.

Class "C," consisting of those willing to serve at place of residence only, and includes both trained personnel and others ready to undertake duties hereinafter specified.

From the personnel in Class "A," field columns, hospital units, and information bureau sections will be organized, but may under certain conditions be organized from Class "B."

Field Columns

1 Director.
4 Assistant Directors.
6 Section Chiefs.
16 Assistant Section Chiefs.
64 Men.

The Directors and Assistant Directors must be physicians in good standing, who, if meeting the requirements, may be commissioned in the medical reserve corps of the Army and Navy.

The Section Chiefs, Assistant Section Chiefs and the men of these columns must be persons trained in first aid, elementary hygiene and hospital corps drill, and must be familiar with appliances (including improvisation) for transportation of the sick and wounded, fitting up hospital trains and ships and similar duties before acceptance for active service. In the selection of Section Chiefs, Assistant Section Chiefs and the men of these columns preference will be given to those who have received special instruction by the Red Cross.

Hospital Units.

1 Director.
3 Assistant Directors and as many Staff Surgeons as may be required.
1 Chief Nurse.
45 Nurses.
Nurses' aids as required.
2 Section Chiefs.
Dieticians, cooks, ward orderlies, etc.

The Director, Assistant Directors and Staff Surgeons must be practitioners of medicine in good standing, who, if meeting the requirements, may be commissioned in the medical reserve corps of the Army or Navy. The Staff may also include dentists and pharmacists.

All nurses must be graduate trained nurses enrolled in the Red Cross Nursing Service. Nurses' aids are under the direction of the Bureau of Nursing Service and in their selection preference will be given to women who have received special instruction by the Red Cross.

The duties of the Section Chiefs embrace the keeping of records and the conduct of the supply service.

The training of the Hospital Units, in addition to strictly professional subjects, comprises practical instruction in Army and Navy methods and the handling of materials used in evacuation and base hospitals and in hospital trains and ships, including methods and means of improvising hospital accommodations from local resources.

Hospital Units will be used to supplement and assist military hospital formations, to perform ward service and to take up certain branches of hospital work, including kitchen and laundry management. Sections of Hospital Units may also be assigned to duty on hospital trains and ships and to other military sanitary institutions.

Supply Units.

Directors.
Pharmacists.
Clerks.
Handlers.
Teamsters, etc.

The training of Supply Units includes practical instruction concerning the kind and character of supplies for the sanitary service and methods of inspection, distribution and accounting for same. Such Units may be assigned for duty to strictly Red Cross supply depots or to assist at Medical Supply Depots of the Army and Navy.

ADMINISTRATION OF CIVILIAN RELIEF.

The administration of civilian relief is conducted in part through a small paid personnel and in part through a large number of individuals and committees who serve in time of emergency under the direction of or in co-operation with the trained staff of the Red Cross. Through a definite plan of co-operation with other agencies which has been worked out during years of experience, it is possible to have the service of a large and effective relief personnel at a very small expense.

CHAPTERS.

A chapter is a permanent local organization which represents all the local activities and agencies of the Red Cross within its territory. A chapter may be said to be the Red Cross in epitome. Members of the Red Cross, within the territory of a chapter, are automatically members of the Chapter and vice versa, and a portion of the membership dues is retained by the chapter for its own use within proper restrictions. A handbook describing the work of chapters and explaining the requirements for organizing chapters will be sent to any address on request.

Is there a Chapter in your locality? Which of these groups do you desire to serve with? Let Headquarters know.

Doctor Sylvester J. McNamara moved that this Society go on record as heartily commending the work of the American Red Cross Society and as volunteering to co-operate with it in every way possible.

It was moved, seconded and carried that the report of the Committee on Humanics be adopted and the Committee be continued in service.

As a report from the Committee on Public Health, Doctor Arthur D. Jaques, Chairman, gave a very interesting talk concerning the efforts being made to exterminate mosquitoes on Long Island, and showed a series of moving pictures of work along this line being done in New Jersey.

REPORT OF PUBLIC HEALTH COMMITTEE.

Supplementing the report of the last meeting I beg to add the following:

Our bill was introduced into the Assembly by our representative in Nassau County, Mr. Thomas McWhinney and into the Senate by Mr. George Thompson.

After a number of changes it was reported out of committee and passed the Assembly and later the Senate, one day before adjournment. The Governor signed the bill shortly after the close of the session. Although this was one of the thirty-day bills there was no delay in having it returned duly signed.

A copy of the bill is filed with the secretary.

Its essential features are as follows:

The establishment of a Nassau County Mosquito Extermination Committee, to consist of four appointees by a committee comprised of the County Judge, Comptroller and Clerk. One appointee by the State Commissioner of Health and the Chairman of the Board of Supervisors *ex officio*. Members to serve without pay. The commission to have power to employ an executive Secretary and all other help necessary such as clerks and assistants, inspectors and laborers: to contract for work to be done for the removal of any and all breeding places of mosquitoes in the county.

Temporary provision for 1916, arranges for a budget to be in the hands of the State Commissioner of Health by July 1st, for approval and that he return it by July 15th to the County Treasurer who shall immediately borrow the required amount as specified in the budget for the use of the Commission.

It is planned this year to take over the projects already under way:

The Plandome and Manhasset work.

The Great Neck work.

The Matinecock Association work.

The Glen Cove work.

A swamp area near Jericho.

The Rockaway Peninsular work.

This last has contracted for 1,000,000 feet of ditches and we plan to supplement it and extend the ditching over the meadows as far as Freeport. $20,000 on hand.

Plans for the next year are to be formulated and filed with the State Commissioner of Health on or before September 1st of each year and returned on or before October 1st of the same year.

It was hoped that the provision of this law could be made to apply to Suffolk County but owing to lack of sufficient interest on the part of enough residents of Suffolk County it was found that the County's representative in the Legislature hesitated to go ahead with the measure for Suffolk. Already plans are being made to carry on a campaign next year for a similar law for Suffolk or the amending of the present law.

A number of representative residents of Suffolk have seen the wisdom of having a central body in the form of a commission to take charge of the work and are beginning to agitate the matter.

The committee on legislation is in need of publicity such as can be given by the members of this society especially in Suffolk County. A campaign of publicity is being laid out from which you will hear later.

The following resignations were accepted by the Board of Directors: Hugh Barr Gray and Sherman W. Bates.

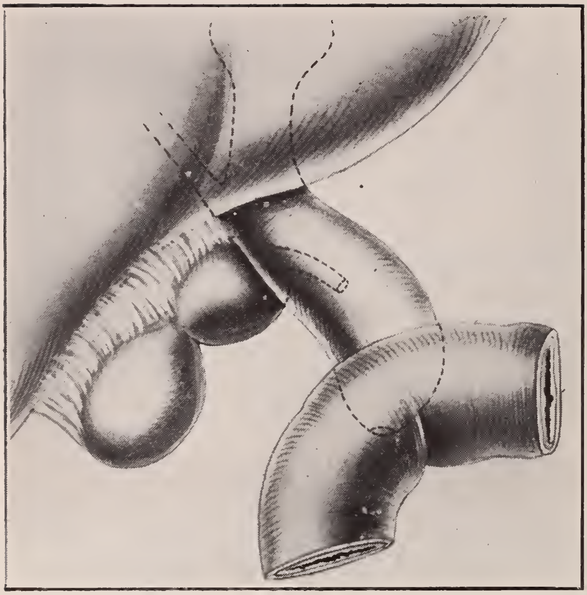
It was moved, seconded and carried that a vote of thanks be extended to the members of the Westhampton Country Club for the many courtesies offered the Society in connection with this meeting.

There being no further business the meeting was adjourned and while a few made a round of the golf course the larger number went down to the beach where they were entertained at the President's summer home with bathing, canoeing, base ball and trap shooting. Shortly after five o'clock the whole party sat down to improvised tables under the trees on the lawn of the Howell House at Westhampton and demonstrated a most sincere appreciation of a dinner decidedly satisfactory in every way. The meeting was one of the most enjoyable in the history of the Society and the chairman of the Entertainment Committee, Doctor Frederick C. Holden and the members of the Committee deserved all the credit they received, and more, for the very successful results of their efforts. The Society is indebted to Doctor Frank Overton and to Doctor Nathan T. Beers for the pictures taken at Westhampton.

The special train left Westhampton at eight-thirty.

JAMES COLE HANCOCK,
Secretary.

COURTESY OF DR. FRANK OVERTON



Echinococcus cyst of the Left Lobe of the Liver Discharging into the Left Hepatic Duct.

SURGICAL CLINICS AND CLINICAL REPORTS IN HONOR OF DR. LEWIS STEPHEN PILCHER

(Continued.)

ECHINOCOCCUS CYST OF THE LEFT LOBE OF THE LIVER DISCHARGING INTO THE LEFT HEPATIC DUCT.

Russell S. Fowler, M.D., F.A.C.S.

Chief Surgeon, 1st Division, German Hospital of Brooklyn; Surgeon, Methodist Episcopal (Seney) Hospital of Brooklyn; Consulting Surgeon, Caledonian Hospital; Consulting Surgeon Hebrew Orphan Asylum.

Cases of echinococcus cyst involving the biliary passages upon which operation has been done are very rare. Cases have been reported by Duval, Langenbuch, Sasse, LeJeuntel (Alencon), Borchard (Paen), Page, Rossi, von Huber, v. Mosetig-Moorhof, Korte and Kehr.

Rupture of such cysts into the biliary passages is very uncommon. Rupture causes sudden blockage of the common duct and is the occasion of very severe biliary colic. There is profound collapse and death has been known to immediately follow. Frequently the blockage is diagnosed as calculus obstruction. A correct diagnosis is only possible if echinococcus elements are found in the stool. In some cases there have been reported recurring colicky attacks and intermittent common duct obstruction; this occurs when the communication between the cyst and bile passages is small and closes from time to time. In other reported cases there were no colicky attacks but symptoms of cholangitis. One fatal case presented the appearance of acute yellow atrophy of the liver. In cases in which the cyst does not present as tumor the differential diagnosis is between liver abscess, cholangitis with chronic stone or tumor blockage of the common duct; the diagnosis is only possible when cyst elements are recognized in the feces.

Occasionally rupture occurs without symptoms; then also the condition can only be recognized by the appearance of echinococcic elements in the stools. In some cases there has been rupture into the veins of the liver or inferior vena cava followed by the carrying of embolic cyst elements to the heart and pulmonary arteries occasioning immediate death. The usual symptoms of rupture of an echinococcic cyst into the biliary passages are severe pain, chills and fever. The obstruction in the common duct accompanying the rupture may be by impaction of cyst contents or by inflammatory swelling caused by the intense irritation.

The case herewith presented gave the following history: N. R., female, age 21, married, No. 33205, seen in consultation with Dr. Calogero Giovinco Nov. 12, 1915. About four months before the patient had noticed that her urine was high colored and she became jaundiced; after three days this jaundice disappeared. Two weeks ago she had pain in the epigastrium, diarrhea and vomiting. This pain continued and she vomited from time to time. Examination showed the abdomen extremely tender below the right costal border and over the right lobe of the liver. There was rigidity of the right rectus muscle. Moderate jaundice.

Immediate operation was done. The liver was found enlarged and acutely congested; the edges rounded. Intense inflammation of gall bladder and ducts with all the glands along the cystic, hepatic and common ducts acutely enlarged. Locally intense peritonitis. Gall bladder opened and found packed with fine brilliant yellow sand. Walls thickened and acutely inflamed. Gall bladder cleansed. Cholecystostomy. Two split tube drains. It was not thought wise to explore the ducts on account of the extreme and unusual acute inflammation. It was thought in all probability the same yellow sand would be found throughout the ducts and that it would be impossible to cleanse the ducts with the existing inflammation.

After course: The jaundice slowly subsided but never entirely disappeared, a little yellow tinge persisting in the eyes. Pain subsided. Bile flowed from the tube and appeared in the feces. It was deemed advisable to continue gall bladder drainage for a considerable period but unfortunately the tube became displaced on the tenth day and this fact was not discovered until the day following. An attempt to replace the tube was unsuccessful. The patient continued free from pain except slight epigastric cramps from time to time; gradually gained strength though a slight degree of jaundice persisted. The wound healed slowly. There was but slight discharge of bile from the wound.

Dec. 8, 1915. Discharged. Wound healed. Very slight jaundice.

Dec. 22. Severe epigastric cramps and slight increase in jaundice.

Dec. 26. More severe cramps and pain over the gall bladder and liver. Readmitted to hospital. Slight jaundice. Liver enlarged, two fingers breadth below free border of ribs. Gall bladder region sensitive. Wound firmly healed. Operation was delayed on account of the difficulty which it was felt would be experienced in cleansing the ducts. However, pain increased and jaundice deepened slightly so that operation could no longer be delayed.

Operation. Jan. 6, 1916. Incision through previous scar. Many dense adhesions. Gall bladder adherent to scar; acutely distended; opened. Contents, thin bile; mucous membrane intensely congested; hour glass type of gall bladder. Colon, omentum, duodenum, liver and stomach densely adherent to gall bladder and neighborhood. Adhesions separated carefully and normal anatomical relationship of parts restored. Cystic duct dilated to twice normal. Common duct dilated to the size of the duodenum or even larger. Bile aspirated from common duct by suction apparatus. Duct incised, walls two to three times normal thickness; escape of bile and bile stained membranous detritus. This membranous detritus varied in size from pin point to the size of the last joint of the ring finger. Metal catheter introduced into common duct and duct washed out with saline, the opening into the duct having been enlarged sufficiently to permit of the ready escape of the saline alongside the catheter. Over a pint of detritus, stringy, glutinous, stained black with bile, was washed out in this manner or removed by a long curved blunt curet introduced for several inches, ten inches at times, into what was taken to be the left hepatic duct. In the detritus were numerous pieces of thick green membrane, recognizable as probable echinococcus cyst lining. Two gallons of saline were used. A large probe passed freely into the dundenum.

Some saline, about a pint in all, was allowed to run into the duodenum from time to time. When the saline from the duct returned clear the curet was passed up and fresh membrane removed and the flow again started. This was repeated until so far as could be ascertained the ducts were clean. The curet passed ten inches into the left hepatic duct without meeting resistance. There was no bleeding from the irrigation. Digital exploration revealed a large opening of the common bile duct into the duodenum, an opening large enough to admit the tip of the finger into the duodenum; the common duct itself was enormous, the finger was lost in it; toward the liver the finger felt an opening about twice the normal size, taken to be the right hepatic duct opening and a continuation of the common duct taken to be the left hepatic duct which freely admitted the finger. The latter was fully as large as the enlarged common duct, the size of the duodenum (Fig. 1.)

The cystic duct opening could be demonstrated and was twice the normal size. The lining of the common duct and the left hepatic duct was smooth. The lining of the common duct so far as could be seen presented no evidence of inflammation. The patient was thin, worn out by long illness and bore the operation very badly. The pulse, while the beats were distinct, was extremely rapid, rising to over 200 per minute during the irrigation of the hepatic duct. It was felt, however, that the patient stood very little chance of recovery unless this duct could be freed entirely of its impacted detritus. When the ducts were apparently clean and the irrigation discontinued, the pulse fell to 180 but of very poor quality. Continuous hypodermic whiskey stimulation was given from the time the pulse became weak and saline and whiskey were administered by rectum. A rubber tube, with a fenestrum cut in the side was placed in the left hepatic duct through the common duct incision in such a manner as to place the fenestrum facing toward the duodenum. This was used to take the place of a T tube which was not available. A large calibre tube was used not only for the purpose of freer drainage and to avoid blockage but also with the idea of allowing of irrigation of the hepatic duct and common duct should blockage occur, or should some of the detritus show in the discharge from the tube. The incision in the duct was sutured around and to the tube. A split tube was placed in the foramen of Winslow; a second split tube in relation to the junction of the cystic duct with the common duct (which juncture was higher than usual); a rubber tube was placed in the gall bladder and the gall bladder edge inverted. The condition of the patient did not allow of cholecystectomy although otherwise this was indicated. A rapid layer closure of the abdomen was effected. The patient left the table with a pulse of 180, very weak.

After-course: General treatment of shock (heat, posture and saline by rectum) in addition to direct cardiac stimulation with half strength whiskey by hypodermic, continuous at first, then every two minutes, later every five minutes and so gradually stopped, succeeded in accomplishing restoration to a fairly good condition in twelve hours; at the end of twenty-four hours the bed was leveled and the patient out of danger so far as the operative procedure was concerned. The jaundice was less marked. At no time had it been severe. For the first forty-eight hours the discharge through the duct tube connected with a subaqueous drain was free and consisted of clear bile.

Jan. 8, 1916. Detritus began to pass through the duct tube and it was feared that blockage might take place. Eight ounces of saline were slowly introduced into the common duct, the subaqueous drain being also disconnected and cleaned. The introduction of saline produced no pain. The patient noticed a sensation of warmth in the epigastrium. There was a return of about one ounce of saline through the gall bladder tube. The return flow through the duct tube contained mucus and thick stringy material, blood streaked. About two ounces of the saline was not returned. Following this flushing of the common and hepatic ducts the discharge from the duct tube again became free and clear bile. As much as ten ounces of bile was collected in the bottle in twelve hours.

Jan. 9, 1916. The flushing was repeated there having appeared some detritus in the discharge. This detritus consisted of echinococcus cyst lining. At this irrigation seven ounces of saline was used, two ounces at a time being slowly introduced and then a wait of a few minutes. The return flow again contained mucus and thick, stringy reddish material. About two ounces of saline returned through the gall bladder tube. Practically all of the saline returned. The patient complained of slight pain during the irrigation.

Jan. 10. The common duct was irrigated, seven ounces of saline being used. Return flow as before; two ounces were returned through the gall bladder tube. Practically all the saline returned.

Jan. 11. Common duct irrigated; return flow about the same; some saline, about two ounces, returned through the gall bladder tube. Patient noticed scarcely any pain. A small amount of saline escaped through the wound alongside the tubes.

Jan. 12. Return flow the same. Saline returned through the gall bladder tube and a considerable amount escaped through the wound alongside the tubes. This irrigation occasioned no pain.

Jan. 13. Sutures removed; good wound union except at emergence of tubes. Split tube removed.

From this time on the patient was comfortable. Free biliary drainage continued from the gall bladder tube and from the duct tube. The tubes were removed on the seventeenth day. Further convalescence uneventful. The wound discharged a good quality of bile and the stools became normal.

Feb. 5. Discharged. Wound reduced to a small sinus. No biliary discharge. Patient strong.

Pathological Examination: The detritus removed at operation showed everywhere echinococcus cyst wall and hooklets. No daughter cysts could be demonstrated. Examination of the detritus passed through the common duct tube post-operatively showed characteristic hooklets. Repeated examination of the stools failed to show echinococcus elements.

Feb. 23. Wound firmly healed. Patient has remained free from symptoms and is rapidly regaining her strength.

May 21. Patient has remained well.

CLINIC AT THE JEWISH HOSPITAL.

Dr. William Linder.

SPLENECTOMY FOR TUBERCULOSIS OF SPLEEN.

Case I. The patient is a woman twenty-nine years of age, who for three years has been suffering from symptoms referred to her stomach. She has lost twenty pounds in weight and is the subject of progressive weakness. She is the mother of three children, of whom the youngest is one year of age. She was admitted to the hospital on March 27, 1916, complaining of a lump in the left side of her abdomen, which was not painful or tender, she is the subject of occasional chilly feelings.

Examination shows an emaciated woman, with clear conjunctivae, no petechia, no enlargement of glands, with diffuse signs of tuberculosis in both lungs. The left half of the abdomen is prominent. There is a marked diastasis of the recti muscles. The prominence of the abdomen is due to an enlargement of the spleen which by percussion is found to extend from the ninth rib above to the brim of the pelvis below. The liver is enlarged and extends from the fifth costal interspace above to 1 inch below the umbilicus. Blood: hemoglobin 57 per cent; R.B.C. 3,520,000; W.B.C. 4,200; Polys. 66 per cent; slight poikilocytosis and anisocytosis. Wassermann negative. Urine normal except presence of some colon bacilli. Temperature upon admission, for the first three days varied from 100 to 102, then sank to from 99 to 100. Pulse from 100 to 120. Respiration 24.

Remarks upon the diagnosis: The hemolytic function of the spleen has been determined by experimentation in Banti's disease when we find excessive hemolysis occurring. The removal of the spleen in the early stages of Banti's disease is attended by great benefit, before secondary cirrhosis of the liver with its associated jaundice, ascites and gastro-intestinal hemorrhages occur. In this connection the Gaucher type of splenomegaly must be considered for purpose of differentiating. The Gaucher spleen occasionally runs in families, has no associated cirrhosis of the liver, no hemorrhages, no jaundice, no ascites. In this particular case the blood picture, the leukopenia, the secondary anemia, the associated enlargement of the liver and the absence of any glandular enlargement suggests Banti's disease. On the other hand, the possibility of tuberculosis of the spleen must not be overlooked. Miliary tuberculosis of the spleen usually produce only a moderate enlargement. The largest spleen recorded with tuberculosis is the amyloid which accompanies chronic ulcerative phthisis. In this case the diffuse lung signs together with the X-ray findings, the dyspepsia, the temperature that subsided with rest bespeaks a possible tuberculosis. In either event a spleen, such as this, is a menace to the continued life and well-being of the patient, and indication for removal is clear.

Ether was then administered by Dr. I. D. Kruskal. An incision was made on the left side extending from the ninth costochondral junction to the outer third of Poupart's ligament along the outer side of the left rectus muscle. The peritoneum having been opened and the spleen exposed, it was found to have a very short pedicle with several large bands of adhesions attaching it to the diaphragm. A better exposure was now obtained by dividing the eighth and ninth costal cartilages and fracturing the corresponding ribs making an osteo-plastic flap, which when retracted brought the diaphragm and upper pole of the spleen into clear view. The esophagus going into the stomach was plainly seen. The operator remarked that an ulcer of the cardiac end of the stomach could be removed with ease by this method of exposure. He stated that he had done a complete gastrectomy using this incision with the recovery of the patient. The diaphragmatic adhesions were doubly ligated and divided between the ligatures. Only the upper pole of the spleen was freed. The gastro-splenic pedicle was then exposed and divided between ligatures until the entire blood supply of the spleen was controlled. This was accomplished without disturbing the spleen from its bed. The spleen was then lifted from its bed; inspection of the wound showed complete hemostasis. The abdominal wound was then sutured in layers and closed without drainage.

Pathological report of specimen: gross weight 1,266 grams; size 26 by 14 by 7 c.m. Capsule very thick, marked increase in consistency of parenchyma. Surface granular pinkish with areas here and there of bluish colored tissue. Tendency to fasicular arrangement of portion of the splenic pulp. Many blood vessels with patent mouths. Microscopic section showed *tuberculosis of the spleen.*

CYSTIC GOITRE; THYROIDECTOMY.

Case II. The patient was a girl twenty-three years of age who had been the subject of a small swelling of the neck, noticeable for ten years. Six years ago it began to increase in size and has become steadily larger until the present time. Now there is a large swelling occupying the left side of the neck and extending from the left angle of the jaw to one and one-half inches to the right of the median line, and from the clavicle to the lower edge of the jaw. The patient suffers from cardiac palpitation only after much exertion, there is slight exopthalmia. Face is flushed; tonsils not enlarged. Blood count: W.B.C. 13,200; polymorphonuclears 81 per cent; monoculears and transitional 1 per cent; lymphocytes 18 per cent. Pulse from 72 to 88; temperature normal. Dr. Linder remarked that this patient has as yet manifested but slight symptoms of thyroid toxemia from a result of increased thyroid secretions, although she is very excitable. Her real motive for applying for operation is on account of the disfigurement from the growth and some pressure symptoms. She has a simple cystic goitre, but such a goitre can produce secondary hyperthyroidism, by pressure upon that part of the thyroid which is still active and so stimulating increased production of secretion. It may easily be converted into a simple goitre of the Basedow's type. In the removal of a goitre of this kind special care is to be observed to avoid removal of the parathyroid bodies producing myxedema. The patient was then anesthetised by ether oxygen by the endopharyngeal method by Dr. I. D. Kruskal. A transverse collar incision extending through the skin and platysma myoides was made and the flaps dissected up sufficient to fully expose the seat of operation. These flaps were then protected with towels secured by clamps and by gauze sponges, after which an incision was made in the median line exposing the sterna-hyoid muscles which were retracted exposing the capsule of the thyroid gland. After two parallel clamps had been placed upon the muscles at right angles to their fibres, at about 1 inch below the hyoid bone, the muscles were severed between the clamps and retracted. The large venous trunks on the surface of the thyroid were carefully doubly ligated and cut between ligatures, and enucleation of the gland was started at the upper pole, the cyst being carefully lifted up as freed, the blood supply being identified and controlled. The recurrent laryngeal nerve was identified. The lower pole extended about one and one-half inches below the upper margin of the clavicle. It was carefully lifted up and rolled out toward the median line, and finally the isthmus was divided.

In the course of this procedure the operator remarked that if the surgeon carefully worked outside of the capsule and ligated all blood vessels as they were met with, the lymphatic vessels would also be enculeated and a dry wound would result, and there would be no necessity of painting the raw surfaces with such an antiseptic solution as Harrington's, and drainage would be avoided for the removal of the excess of thyroid juice spilt in the field of operation for future absorption and the production of subsequent post operative hyperthyroidism. By the method of operating which he followed he left his wound so absolutely dry that he was able to close it and have no trouble thereafter. He was careful to avoid injury to the nerve or to the parathyroid bodies. If he met with any difficulty it was his custom to divide the isthmus first and study the region of the parathyroids and the blood vessels. At the completion of the neucleation, the trachea exposed at the bottom of the wound was found to be compressed and flattened and displaced to the right of the median line. After final careful hemostasis the muscles that had been divided were resutured. A few interrupted subcuticular catgut sutures coapted the skin. The skin wound itself was closed by special metal clips which were to be left in place for five days. The use of these clips was resorted to because of the less danger of skin infection that attends such use. No drain was put in place. The operator said that most cases of this kind were allowed to sit up at the end of twenty-four hours. The subsequent history of this case was an uneventful recovery.

ACUTE HEMORRHAGIC PANCREATITIS; EXPLORATORY INCISION; DRAINAGE.

Case III. Woman thirty years of age; mother of two children, who gave history that six years ago she first experienced a severe pain over the entire abdomen, which came on suddenly. Was attended with repeated vomiting with chills and fever and marked perspiration over the entire body. The attack lasted eight hours, at the end of which time relief was experienced. It occurred during her first pregnancy. One and one-half years later, during a second pregnancy, second month, she then went through with a similar attack. almost identical in its features. Eight months later a third attack occurred and for the next five months these attacks occurred every week or two but of less severity than at first. They were relieved by enemata. Nine months ago these attacks again began, although not so severe as formerly. They were attended with pain which extended throughout the abdomen and at times radiated to the right shoulder. They were attended with vomiting, chills and fever and her abdomen would become moderately swollen so that it was difficult for her to assume a sitting posture. Four days previous to admission to hospital she was again seized with severe epigastric pain, which radiated to the left lumbar region, attended with vomiting. The attack lasted for twenty-four hours, but the vomiting continued and the abdomen began to swell. She was constipated. No urinary disturbance. In this condition she was admitted to the hospital. Upon admission the abdomen was distended, the abdominal walls were slightly rigid, the epigastric region was doughy to the touch and very tender. The tenderness was present over the entire abdomen; no abdominal organs could be palpated. Also tender in the left lumbar region, especially at the right costovertebral angle. Right trapezius tenderness also obtained.

Blood count: Total 23,500; polymorphonuclears 75; mononuclears 1; lymphocytes 24. Temperature from 100 to 100.4. Pulse 72 to 80. Respiration is normal. Urine negative.

Dr. Linder remarked that the previous history of this patient indicated typical attacks of gall stone colic. The last attack started four days ago which differed from her previous attacks for these reasons: The pain was referred to the mid abdomen which radiated to the left of the median line around to the lumbar region. Upon inspection both the abdomen and face showed a slight cyanosis. Palpation revealed a distended, soft, doughy abdomen with a sense of fullness in the mid epigastrium and tenderness extending to the left of the median line with special tenderness at the costo-vertebral angle. No special tenderness over the gall bladder and no palpable gall bladder could be found. The diagnosis of chronic cholelithiasis and acute hemorrhagic pancreatitis was probable, and an exploratory abdominal incision is called for.

Ether was then administered by Dr. Kruskal, and the abdomen was opened through a right rectus incision; coils of distended bluish small intestines appeared in the wound. The gall bladder when exposed was found to contain numerous gall stones. It was thin walled and bluish, no obstruction of the cystic duct. Palpation with the finger in the foramen of Winslow showed no stones either in the Ampulla of Vater or in the common duct. Through the gastrohepatic omentum an opening was bluntly made by the finger to expose and explore the pancreas. Some serosanguinous fluid escaped from the opening. After carefully sponging the cavity exposed, the pancreas was seen to be chocolate colored, containing numerous patches of fat necrosis. The pancreas was punctured in four or five places with a blunt instrument, and a split rubber tube containing gauze was placed down in the retro-peritoneal space. The gall bladder was opened and its contained stones were removed.

Dr. Linder remarked that primary hemorrhage into the pancreas does occur producing the typical lesion of fat necrosis. If this hemorrhage is not too great, these attacks may not be recognized, and the patient may get well from a slight hemorrhage, but such hemorrhages have a tendency to recur and unless recognized and operated upon usually ultimately terminate fatally. The old conception that diagnosis of acute pancreatitis cannot be made except at an autopsy table, or if made the cases end fatally, does not hold today. In his own service at the Jewish Hospital they have records of at least twenty-four cases of acute hemorrhagic pancreatitis during the past six years and fully 75 per cent had been diagnosed or suspected before operation. It is important that in all operations upon the upper abdomen, where the pathology is not clear, that the pancreas should be exposed and inspected. If this routine was followed a great many more cases would be diagnosed, at least on the operating table. The history of the case just operated upon is typical of acute hemorrhagic pancreatitis in its early and mild stage. When the pancreas was exposed, however, extensive hemorrhages were found. One of the most frequent conditions that acute hemorrhagic pancreatitis is mistaken for is acute intestinal obstruction. Pain, vomiting, abdominal distention and obstipation occur in both conditions, but the pain in acute hemorrhagic pancreatitis is more severe. It is so great often that a half grain of morphine does not relieve it. In intestinal obstruction vomiting is more profuse. The differentiating from gastric or duodenal perforation is to be made by the absence of the scaphoid abdomen and the boardlike rigidity and also the absence of any previous history of gastric or duodenal ulcer.

The after history of the patient operated upon was an uneventful recovery.

(*To be continued.*)

AUTOTHERAPY.*

Charles H. Duncan, M.D.

New York City.

MR. PRESIDENT and members of the Brooklyn Society of Internal Medicine, and guests. It is with pleasure I accept the kind invitation of your honored President Dr. Andresen to explain to you something of a new therapeutic principle that is nearer and dearer to my heart perhaps than any other; a subject to which I have devoted my entire time during the past six years in original investigation, Autotherapy.

The human body is a self-regulating mechanism, it automatically restores normal equilibrium; restoring normal equilibrium is the all important factor in the treatment of disease.

Autotherapy or self cure, *i.e.,* self regulating or self preservation, is the "First Law of Nature"; so the subject of this evening's discussion is a new conception of the "First Law of Nature."

Autotherapy is founded on clinical experience; the court of last resort in determining the therapeutic value of any medicinal preparation. The value of clinical experience was long ago recognized by Hippocrates who taught that "Observation rather than speculation is the true instrument of progress."

Now that we have discovered in a measure how Nature cures the tissues, we take advantage of the slow natural process, and cure the patient quickly, or abort the disease in its incipiency. We put out the match as it were before the conflagration is well started.

In this discussion I would appeal to reason and thus awaken professional interest in Autotherapy. The main thought I would leave with you is—*The purification of the body comes from within; that Nature is the true Healer,* or the purifier of the body tissues; and then the self evident fact that logically follows, medicine is lacking. The hand writing is on the wall. *Medicine has been weighed in the balance and found wanting.* Therapeutic nihilism must give way to the thought that, *"The Purification of the Body Comes from Within."*

† "Who has always been the Great Healer? Is it not the Great Creator? Before medicine had a name or substantial reality, sick and wounded men and beasts largely recovered from their morbid conditions by what would be called the defensive actions of Nature. No thinking man can close his mind to the obvious fact that every recovery is a triumph of the living being over the malign conditions

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* Paper read before the Brooklyn Society of Internal Medicine, March 24, 1916.

† Doctor James Law, Ex-Dean and Emeritus Professor of Cornell University Veterinary Medical College, on Autotherapy.

and cause that beset it. Had the evil influence continued with unabated force in a system that could get up no greater resistance than at first, when the invaders found lodgement in the tissues, a fatal outcome would have been inevitable. The repair of the wounded tissues has been, as a rule, expected, and looked for; by Natural Autotherapy, the counterpart in the repair of deeper and more obscure tissue of deranged function in cells, metabolic processes, etc., was equally to be looked for, through the corrective efforts of Natural Authotherapy."

Autotherapy, *i.e.,* self preservation, is new in the sense that the principle underlying the cures made by its use has never been so thoroughly understood, but it is as old as life itself, and has its roots reaching deep into the texture of our very beings.

Hippocrates, the grand old father of medicine, taught two thousand years ago that "Every disease carries with it its own remedy." This ancient saying has come down through the ages, and like all other sayings that persistently appear in medical literature, it contains some truth.

Philosophers and wise men have ever sought the secret spring of life and its relation to disease. They have sought the secret in the boiling-pot, and the magic powders of the alchemist; they have sought it in the stars; in mysticisms and in incantations, etc. Scientists have delved into the bowels of the earth in search of new minerals and life giving waters.

The panacea for human ills has been the goal of all ages. Ever and anon we have seemed about to grasp it, and almost every generation has heard the cry "Eureka"—I have found it. But the main secret is illusive and has evaded us. But, deep down within the hearts of men and physicians there has ever been the hope—aye, more than hope—the belief—that some day someone would solve the riddle of the ages, and when once solved the application would be quite simple.

Achilles gave his name to the little flower—the Yarrow—that grows by the roadside, for with its medicinal virtue he is said to have healed the wounds of his soldiers. Ponce de Leon sought the fountain of youth in unknown lands across the seas.

Modern medicine has teemed with prophecies as yet unfulfilled; with desires unsatisfied; with hopes deferred; with prayers unanswered; and still the riddle is unsolved. Our modern laboratories with inexhaustable funds have promised much, but as yet the truth,—*the remedy comes from within*—like the rainbow's end or the will-o-wisp has never been firmly grasped. Hippocrates taught that, *"Nature is the true healer,"* and his *expectant treatment* is often now the best we know. Bouchet aptly says: "After two thousand years of observation, experience and controversy, the Naturism of Hippocrates, yet stands upright." We seek to

"Pluck the lustre from the stars
And lose the jewels at our feet."

The wise men no longer have to search the heavens above or the earth beneath, or the waters under the earth for a remedy with which to cure a patient suffering with a localized infection: for Autotherapy proves, the remedy the patient needs lies—within—his—own—body. The application is so simple we wonder it was not discovered long ago. *"Every patient suffering with a localized infection, carries the remedy for his condition within the locus of his infection."* This is Nature's remedy, uncontaminated and undefiled with complexities of laboratory technic, manufactured in Nature's laboratory—the body tissues of the patient.

When the writer gave a few drops of pus by the mouth and cured a patient suffering with a purulent infection, he established a new therapy and called it Autotherapy. "This is the remedy we long have sought and mourned because we found it not." In the light of Autotherapy the despised drop of pus becomes a ministering angel of mercy, a priceless heritage bequeathed by provident Nature to cure the patient. It is always at hand within the body of the patient and can most always be found. It is the most simple, convenient, cheapest and the most effective medication we have at our command. It is worth to the patient more than can be expressed by any intrinsic valuation, for it cannot be duplicated.*

The scales are fast dropping from our eyes. Formerly we saw through the glass dimly, but now face to face we see naked natural truths taking form and outline.

The technic of the application of Autotherapy to the various bacterial infections can be readily understood from the reprints of several articles that will be distributed at the close of the meeting; for this reason the present paper will merely state the Principles of Autotherapy.

GENERAL RULE.

Filter the pathogenic exudate through a Duncan Autotherapeutic Apparatus and inject the unmodified immunizing bacteria-free filtrate hypodermatically.

Another technic, applicable only to infections not directly connected with the alimentary tract or respiratory system, is as follows:

Emergency Technic—If the crude pathogenic exudate from an extra-alimentary or extra-pulmonary infection is placed in the patient's mouth antibodies specifically corresponding to the toxins of all infecting micro-organisms in the locus of infection will tend to be developed.

We thus arouse with Nature's remedy the natural interdependent activated forces within the body tissues, on which the improved condition of the body depends.

AUTOIMMUNIZATION BY HYPEREMIA.

We are all autotherapeutists, humiliating as it may be to realize it; Bruce says in substance in the *Proceedings of the Royal Society of Physicians,*—"It is this natural autotherapy that is exploited with success by the time honored custom of applying hot fomentations, Bier's hyperemia, etc., to the inflamed area; for as soon as the invader lands, there is a call for more blood, more plasma acts in destroying them by chemical processes, and by the action of the specific antibodies. The leucocytes rush out to ingest the foes. If this is insufficient, antibodies are formed in response to the toxins carried throughout the body in the blood stream and the resistance of the plasma is thereby increased."

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*If there is doubt in the mind of any physician as to the remarkable efficacy of Autotherapy, try this simple treatment on the next ten cases of severe infection that come to you. Place six drops of pus in an ounce of water and give it to the patient to drink, one dose, that is all. Then look up the literature on the subject for subsequent doses if any is necessary and publish your results. This is only fair. Convince yourself. Take no one's opinion for this but your own.

Nature was the earliest autotherapeutist, by arousing the natural defensive forces from within. In assisting nature by induced hyperemia we have several processes to study and imitate. First, irrigation of the infected area by plasma and leucocytes, and this of itself may be enough to cure a mild infection. Second, autoinoculation, or washing of the bacterial products into the blood stream, to stimulate in the tissues the formation of new antibodies, specific to the invading micro-organisms. By induced hyperemia as in hot fomentations, etc., not only is irrigation assisted, but such irrigation of plasma itself of value, necessarily helped to an increase of that auto-inoculation on which the improved resistance of the body depends. Such an effect is obvious as far as hyperemia is concerned. In the application of hyperemia the influence of the physician has been solely in the direction of irresponsible irrigation, but Nature's armamentarium contains in addition the weapon of auto-inoculation, a weapon to be brought into use where irrigation with plasma alone has failed. The physician has neglected this weapon; he has been an irrigator pure and simple. To be sure, auto-inoculation has necessarily occurred as a result of his irrigation, but has he directed it? Has he applied his hot fomentations at such intervals that time may be allowed between for the formation of antibodies? Has he calculated at what intervals he should auto-inoculate his cases to maintain most successfully their toxic immunity? As a matter of fact he has done none of these things.

The fresh unmodified toxic substances developed during the course of an infection, are the substances nature utilizes in auto-immunizing the patient, these are also the substances the physician employs in treating the patient autotherapeutically. Thus we see Autotherapy brings about a natural cure when a cure is possible. These nascent (if I may be permitted to use the word) unmodified toxic substances developed in the patient by the action of the infecting micro-organisms on his body tissues, are most potent and curative.

Autotherapy is the natural system of drugless therapy that employs all of the unmodified toxins and all of the associated unmodified toxic tissue substances developed during the course of the infection as enzymes, ferments, etc., against which the tissues react in a curative manner.

It should be noted that the *auto-unmodified toxin complex* contains the toxic substances of the causative micro-organism and the toxic tissue substances that correspond to each in the same proportion as they appear in the patient's body. This is the exact Natural Remedy.

Electro Autoimmunization and Radio Autoimmunization.

The hypothesis of electro-autoimmunization and radio-autoimmunization are accounted for by a number of phenomena otherwise inexplainable.*

The evidence in any one direction is not very abundant or very conclusive, but the cumulative evidence along various verging lines is I think considerable. The first thing that led the writer to the suspicion of a possible autoinoculation by the high *frequency current,* was the fact that a number of cases of chronic catarrhal conditions of the nares were reported as having been cured by this means at a medical meeting in Denver.

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* Much of the discussion of the Electro-Autoimmunization and Radio-Autoimmunization is taken from a paper by Dr. J. Mitchel Bruce, read before the Royal Society of Medicine, June 15, 1910.

The reaction and cure of these cases were so similar to the reaction and cure of the same conditions by means of autotherapy, that it set the writer thinking and he decided to examine minutely the literature on the subject. It was found that psoriasis, lupus, eczema, are all reported as cured or benefited by the Röntgen rays, in a manner similar to those treated by autotherapy. What more natural than to suppose that the patient himself furnishes the necessary unmodified toxin complex under the stimulus of the Röntgen irradiation! The hypothesis receives still more confirmation when cases of lupus were reported in which an irradiation of one region—the leg for example—was followed by improvement in another region, such as the face. The same thing was obvious in other diseases.

Acne on the face was cured by the x-ray and high frequency treatment applied to a similar lesion on the back, and shoulders; high frequency waves applied to a crop of boils would apparently render the patient immune to further inoculation.

The hypothesis received further corroboration from the observation that in certain cases of lupus, and even of cancer, irradiation of affected glands was followed by an improvement in the lesion itself. Let me give you a few instances to show the sort of evidence on which we base our case; they are but sketches of impressions, but may give you an accurate idea of the facts, as these cases were formal pictures duly authenticated by dates, history, names, etc.

Butcher of London reports the following case: "A young soldier turned out of the army as incurable—deeply pitted with variola acne; face, neck, shoulders and back covered with indurated nodules and suppurated abscesses. He is cured in a few weeks by x-ray and high frequency waves. No other treatment was given either externally or internally, and the abscesses were not opened; they gradually shrunk, the adjacent skin became dry, the fluid contents of the abscesses dried up, with the final evacuation of a tiny plug of inspissated pus. There was no further formation of pustules. The man is immune to staphylococcus infection."

The same writer reports another case: "A poor governess comes in much the same condition—pale, anemic, half starved, with pustular acne of many years standing. She is treated with high frequency waves, x-rays and ultra violet light. The back and neck are chiefly treated, but the face also improves. The pus dries up, the nodules disappear, and there is no further development of pustules. The case has been cured by electric-autoinoculation. She was immunized to her own infecting micro-organism.

From another source I find the following case reported: A young naval officer had been plagued all his life with slight acne; he is treated with two very high irridiations of x-rays. The treatment is unexpectedly interrupted by his return to his ship. Nevertheless he is cured and has no return of his life-long complaint. *He has been rendered immune by radio-autoinoculation.*

A young woman is treated for psoriasis by x-rays with the result that she is cured, as I have cured several cases by the injection of the autotherapeutic blood serum.

One could add to these cases many others to prove the profound influence of the electric and radio active treatment on the general organism.

But the strongest evidence of the autoinoculational action of electrical treatment is derived from a consideration of the case of appendicitis that was reported as having been cured by Dr. Wm. Harvey King of New York City at one of the State Society Meetings by means of a certain form of electricity. Dr. King found by experimenting on beef liver with the electrodes placed ten or twelve inches apart, that midway between the poles a thermometer registered considerably higher than when placed at other parts of the liver. He found by controlling a certain current he could control the height of this temperature. Now he placed the poles on the abdomen and back of a patient in such a way that the appendix in normal position would come immediately between them, and turned on the proper amount of current. A reaction followed similar to the reaction that sets in when a patient is treated autotherapeutically by injecting subcutaneously the filtrate of sputum. Here was a case undoubtedly autoinoculated by electricity, the electricity causing a hyperemia or congestion of the appendicular region which resulted in autoinoculation and thus autoimmunizing the patient with his own unmodified toxin complex.

Our hypothesis then supposes that the etherial waves contribute to the process of autoinoculation by the production of opsonins, by the detachment of the side chains of Ehrlich, by facilitating the reaction to the toxin from its laboratory in the tissues.

One of the greatest arguments in favor of the autoinoculation hypothesis is the latent period which follows Röntgen or radium irridiation and which precedes the amelioration. The ominous pause to my mind, is eloquent; and indicates that the resources of the patient are gathered to react to the toxins; it appeals to every one familiar with reactive medication as the negative phase preceding the positive phase. The reaction is not merely a physical or chemical one, but a biological reaction in which the energy of the reaction may exceed the energy of attack.

Much time will elapse before we can hope for a practical means of producing or controlling autoinoculation by electrical means, or by Dr. King's thermo-penetration, as the conditions within the live human body are much different from those of the dead liver. If autotherapy theory itself is correct—if the production of anti-toxins and anti-bodies is our only biologic means of resisting a microbial invasion—then you will allow that the electrical method of exciting the resistance of the cells, by calling out the toxins of the infecting organisms themselves is a great advance over the cruder method of vaccine treatment by the injection of foreign-bred micro-organisms.

Its disadvantages lie in the uncertainty of the dose; in Autotherapy the dose of unmodified toxins in solution can be fairly accurately gauged.

One of the ablest exponents of Sea Plasma Therapy states that, "Sea Plasma is made in the laboratory by combining deep sea-water with spring-water in proper proportions to make an isotonic solution, and when this is injected in sufficient amounts in from fifty to two hundred cubic centimeters, the results are most gratifying in neurasthenia, enterocolitis, and many other infections." In the light of autotherapy it appears reasonable to assume that the injection into the patient of such large quantities of fluid must necessarily rupture some minute blood vessels, and therefore produce some extravasation into the tissues. The toxins would now be diluted with a physiological salt solution within the loose cellular subdermal tissues where we know the greatest amount of anti-bodies are developed. With this explanation it is apparent that this Sea Plasma process is nothing more or less than another autotherapeutic procedure. It appears that the various elements of sea-water (strontium, chlorine, lithium, etc.), are not the elements that effect the cure of the various infections; that raise the opsonic index to the staphylococcus, influenza, bacillus, bacillus of Friedlander, Colli bacillus, streptococcus, pneumococcus, pseudo-diphtheria bacillus, etc. It appears that they have little or nothing to do with the cure, except as they conjointly make up the specific gravity producing an isotonic, or physiological salt solution. It appears that a common sterile salt water solution of the proper density would be equally efficacious.

The writer is led more strongly to this belief by a paper published by G. A. Stevens, in the *British Medical Journal,* April 5, 1913, in which a number of cases of syphilis were cured or benefited by the hypodermic injection of rather large doses of sterile water. We know that syphilis is a blood disease, and by the process described above, the patient is inoculated with his own unmodified toxins in the subdermal tissues. This is the fundamental principle upon which the cures made by Autotherapy rest, that has been iterated and reiterated over and over again during the past six years. This is but another method of employing the great principle of Autotherapy that was distinctly foreseen and mentioned in many of my earlier articles. For example, The Lanset-Clinic, November, 1911, stated "Now that the way is open, other methods of administering the toxic products of disease may be developed." "Any method or system of therapy that employs all of the unmodified autogenous toxic substances developed during the course of an infection to cure the patient comes under Autotherapy." "Cures made by applying this principle must be considered as Autotherapeutic cures."

Injection of these large quantities of sea-water is but another inexact method of curing the patient by applying the autotherapeutic principle.

Carrying this conception still further, the writer has cured infections by simply puncturing a vein with a hypodermic needle, drawing the blood into the syringe that already contains a proper amount of this sterile physiological salt solution, and then withdrawing the needle till it is just beneath the skin and inject the contents there.

By this method the toxins are diluted and placed in subcutaneous tissues, and we avoid the liability of rupturing some minute blood vessel. We see the toxic solution in the syringe and we can accurately measure it.

The probable efficacy of a trauma that results in an extravasation of blood into the subdermal tissues in a patient suffering with some chronic infection is apparent.

It is generally conceded by most unbiased medical authorities that autogenous vaccines are superior to stock vaccines. So in closing this paper I will compare briefly the unmodified toxin complex or the autotherapeutic remedy with the Wright's autogenous vaccine. This latter strictly speaking is not autogenous, for Wright's vaccines are not the parent micro-organism developed within the patient's body, but they are their grandchildren and great grandchildren which have been developed on agar-agar, Bouillon, animal's blood, etc. The *autotherapeutic remedy is the only strictly autogenous therapeutic preparation we have at our command* in fighting disease and death. Wright's partial toxin complex is distinctly modified by every step in the laboratory through which it passes. If his vaccines cure, such cure is not because of the laboratory manipulation, but in spite of it. Wright's autogenous vaccine may not always contain the complicating micro-organisms nor does it contain the unmodified tissue toxic substances, as enzymes, ferments, etc., toxic results of chemical changes in the protoplasmic molecule against which the tissues react in a curative manner. Some pathogenic micro-organisms cannot be grown outside of the patient's body by any known means. Under these conditions Wright's vaccine is worthless. The therapeutic effect of Sir Almroth's partial modified formerly autogenous vaccine is again altered by sterilization and by preserving chemicals. It is not as convenient to administer as the autotherapeutic remedy for it takes several days to prepare it, while the patient too often grows worse, passes the crisis or dies before it is ready. The preparation of the autotherapeutic remedy on the other hand has none of these disadvantages, administering it is a simple bed-side or office procedure. The time that it takes to administer the Autotherapeutic Remedy is usually from one minute to a few hours. For these reasons the superiority of the autotherapeutic remedy over Wright's old and faulty vaccine is apparent and not open to controversy. The preparation of Wright's autogenous vaccine must be made by a skilled pathologist, one upon whose report absolute dependence must be placed, and he is not always easy to find. Its preparation demands a costly and elaborate laboratory, the proper use of which requires much training.

The autotherapeutic remedy has none of these disadvantages. By its use the family physician again comes into his own, for he may now employ Nature's Remedy, undefiled and uncontaminated with complexities of the laboratory technic, developed in Nature's laboratory, the body tissues of the patient.

The criticism of the autotherapeutic remedy as unscientific is unjustifiable unless we desire to be scientific in preference to being effective in the treatment of our patients. Nature often cures where science utterly fails.

Autotherapy is no longer an experiment, it is being used successfully by thousands of physicians scattered in every part of the world. Many who have used it on themselves, as patients, say, "It acts like Magic."

It is being taught in many medical colleges. A new-born confidence in therapy awaits those who are unfamiliar with its use. It is no more dangerous than tuberculine or the vaccines that are in daily use among us. It is vouched for by the Veterinarians and unanimously endorsed by several County Medical Societies.

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Discussion of Dr. Duncan's Paper.

By Henry W. Rose, M.D.

I took the Post-Graduate Course of Lectures on Autotherapy that was given by Dr. Duncan last summer. He invited me to be present this evening and to state briefly the clinical facts that have come under my observation in the use of his Unmodified Autogenous Toxin Complex. I am pleased to state that I have become an earnest convert of Autotherapy as discovered and founded by Dr. Duncan.

During the past year I have cured many infections with Autotherapy that have apparently resisted all other methods known to me. This includes many cases of chronic rhinitis with sinus involvement, acute and chronic bronchitis, acute and chronic conditions in the female pelvis, acute gonorrhea in the male, furnacles and pulmonary tuberculosis. One case that I diagnosed as acute Iritis responded quickly with this treatment.

Case I: Young woman, age thirty-two years, had a chronic Endometritis and Salpingitis that begun six years previously, at her last confinement. Autotherapy saved this woman from a complete hysterectomy. This case as has many others treated by me did not respond to the usual methods of treatment. We should learn to treat the patient when we employ Autotherapy and not the disease.

When we come to understand the aggravations that follow the treatment and the amelioration of the symptoms that succeed this giving no medication so long as the patient improves on the last dose, we will often work miracles.

I recommend cheerfully and conscientiously Dr. Duncan's work in Autotherapy and will state with little fear of contradiction by those who know, that we have a weapon in Autotherapy the power of which we have little dreamed.

EDITORIAL

MEDICAL PREPAREDNESS.

"DEAR Doctor:

Would it not be a good idea to publish at once a series of articles on medical preparedness?

We need to know what doctors can do. How can we train for the medical reserve, and where? How can we work for the Red Cross? What are the three classes A, B & C of the Red Cross? How long does medical reserve training take? What can the stay-at-homes do? And the older men?

Our willingness is great. Our notions are hazy.

Just working to increase dollar memberships in an organization is hardly inspiring or satisfying whenever there is bigger work to do.

Yours very truly,
ROBERT L. DICKINSON."

Dr. Dickinson's letter may well serve as the text for a little sermon on medical preparedness, though it hardly seems necessary to provide a series of articles in answer to the questions which the doctor has raised, all of which can be answered briefly and to the point.

In the first place, membership in the Army Medical Reserve Corps is of two classes, active and non-active. The non-active list was prepared some years ago and at the time included a considerable number of physicians prominent throughout the country, whose influence was counted upon to recruit the ranks of the medical corps by influencing young men beginning the practice of medicine to consider a career in the Army Medical Service. It is also open to those who have actually served and who may wish to withdraw from active service, but who are willing to be called upon again in case of need. During the past two years members of the non-active reserve list have been invited to undertake practical training to fit them for active work by attending camps of instruction at Tobyhanna and elsewhere throughout the United States and by taking a correspondence course for Military Surgeons that is conducted from the School of Ft. Leavenworth. The Active Reserve Corps is made up of two classes, those who have served as contract surgeons or volunteer surgeons, but who are debarred on account of age from promotion into the regular service; and those who are being trained to enter the Regular Army Medical Corps. Any one desirous of entering the active reserve has only to write to the Surgeon General at Washington to be supplied with detailed information as to requirements, duties and privileges. Membership in the non-active reserve may be had upon recommendation to the Surgeon General and after an examination conducted before a member of the Medical Corps. Opportunity is given to members of the non-active reserve to qualify for active service and from time to time they are requested to signify their willingness to undertake active work in army posts here or abroad, in training camps, recruiting stations and so on. The nature of military surgery is such that considerable technical training is demanded especially in sanitation, physical examination of recruits and so on and in the clerical duties of the medical department. No matter how skillful a surgeon, internist or diagnostician the physician in civil life may be, it is evident that the peculiar demands of military surgery, especially in sanitation and tropical medicine, demand an adequate training before he can be even moderately useful as a military surgeon. The real need of the army at present is for well-equipped young men in the regular medical corps and the efforts of those members of the profession who are anxious to serve in the preparedness campaign are especially needed in persuading well-equipped young men to choose this career which in many ways offers decided advantages, inasmuch as it assures a comfortable income, increasing with age and service, an assured standing, opportunities for original research such as have produced a Gorgas and a Craig, and a pension sufficient to live in comfort upon retirement. The standard of professional requirement in the Army Medical Corps has been steadily raised until today it stands for the best. A short-hand training in army surgery is afforded by two camps of instruction to be held at Plattsburgh beginning Wednesday, July 12th and 24th, when General Wood announces that instruction in camp sanitation and military hygiene will be afforded to volunteer physicians who may enroll with the Military Training Camps Association, 31 Nassau Street, New York City.

The Red Cross offers opportunity for service either by membership or by enrolling for service. Detailed information in regard to service may be obtained by addressing the Red Cross Committee, 26 Court Street, Brooklyn. The active campaign for new members the Red Cross is now engaging in should leave no one in ignorance of the requirements and privileges of that organization. Dr. Dickinson's remarks, as reported in the minutes of the June meeting of the Associated Physicians and printed elsewhere in this issue of the Journal give an excellent resumé of the Red Cross and its requirements.

How long does medical reserve training take? To be adequately trained should demand from three to six months with practical instruction and text book work, but there is another way in which such a training may be obtained for those physicians who are willing to undertake the burden, and that is, through the medium of hospital and ambulance corps attached to the National Guard which for the most part are not up to their full strength. As a matter of fact, an article in the Military Surgeon for April quoted in the editorial pages of the last issue of this Journal shows how far behind this particular branch of the National Guard already is. An enlistment in that particular branch of the militia would go far toward giving physicians efficiency in time of need.

What can the stay-at-homes do and the older men? One has to put considerable restraint on that unruly member that St. Paul wrote of in giving a moderate answer to this question for it opens up the whole field of honest cooperation among doctors. Among some of the self-evident things that we can do are helping to take care of the interests of the fellows who have gone to the front, *and all that that implies.* We might organize for the purpose of familiarizing ourselves with those great questions of sanitation and hygiene to which most physicians are woefully ignorant. We might discuss ways in which to be prepared for the medical and hygienic care of that large body of dependents who will be the real sufferers from the present situation on the border. We might ally ourselves with the commercial interests that are already planning how the country may best marshal its resources in time of need. In this connection the trouble with the medical profession has always been that while individuals are capable of heroic self sacrifice, the disunity of the profession as a whole has rendered it incapable of rising to its fullest possibilities by concerted effort. There is subject matter for a splendid sermon here, but this is not the time nor place for homiletics. What is needed here now is a committee on organization for practical ends. H. G. W.

THE EPIDEMIC OF POLIOMYELITIS

SO much has appeared on this subject in both lay and medical press since the outbreak of the present epidemic in New York, that there is not much to add; but possibly a critical review of some phases of the general subject may be in order.

One is impressed first of all with the tremendous hysteria that has attended the epidemic from its inception. Surely, as the psalmist said, "this is the pestilence that wasteth at noonday." When one considers that a possible total of 3,000 cases represents a risk of infection of about 1 to 2,000, it seems needless to run away from the chances of infection, especially in view of the uncertainty as to how the infection is spread. The number of cases that have developed among children who have been taken away from the city is a grim commentary on the futility of flight. The cordial unanimity in cooperation between the Health Department and the various scientific bodies of the city is a pleasant thing to dwell upon. Apparently the city government is willing to do everything in its power to meet the situation as far as it can and there is a real earnestness of purpose evidenced in all the city departments in their efforts to do something. Money has been generously subscribed; expert advice has been sought; national public health authorities have cooperated and a paper campaign has been waged. Two aspects of the situation stand out with startling clearness. In spite of Flexner's achievement during the last epidemic, our increased knowledge of the disease amounts to little except in so far as the hygienic care of the sufferers has improved and better results in the treatment of the subsequent paralyses are shown. We do not yet know why the disease is sometimes epidemic and sometimes sporadic. Meltzer has suggested subarachnoid injection of adrenalin to limit the edema in the spinal cord with results that have yet to be checked up by more extended experience; and the prophylactic cleansing of the nose and throat is being widely urged; but as to specific treatment, early diagnosis, method of transmission, recognition of the nonparalytic form of the disease, rational therapeutics and effective prophylaxis, there has been no increased knowledge. Consequently our efforts at quarantine, being based largely upon conjecture and actuated by fear, are pitifully inadequate. We endeavor to isolate the infected children, while adults who are possible carriers travel about freely. We are very hard upon the housewife who is ignorant or careless about the care of her garbage, while the garbage collection carts wander uncovered through the streets and the emptied cans stand uncovered after the collector has passed on. It seems fair-at this point to protest vigorously against the unsanitary methods of garbage collection now in vogue. The ordinance compels the householder to provide a metal can with a cover; the garbage adheres to the inside of the can and the efforts of the collector to dislodge it are only partly successful, with the result that the can soon becomes battered and the cover will not fit. Some garbage inevitably falls to the street and the carts themselves cannot be kept properly covered. It would be far more satisfactory if housekeepers were permitted to use a paper lining that would keep the garbage entirely enclosed from the moment it leaves the table until it enters the disposal plant; this would keep the insides of the cans clean, prevent soiling the street, make the collection clean and inodorous and lessen everybody's work; *but* it is forbidden by the garbage contractor because he finds it inconvenient to render old newspapers into olive oil, or whatever the end product of the garbage rendering may be. The householder is forbidden to sweep his sidewalk after eight in the morning, but the public thoroughfares are polluted all day long by the droppings from horses, dogs and cats and dried dung is swept about by every breath of air and tracked to and fro by countless shoe soles. This is not said to disparage the laudable efforts that are being made, but only to show how superficial those efforts at cleanliness really are.

The second thought that arises from the handling of the present epidemic raises the question as to whether the present organization of the Health Department is adequate to meet emergencies. In the beginning it was very evident that physicians, nurses, hospital accommodations and ambulances were inadequate for the tasks to which they were suddenly called and since then the supply has been largely met by help loaned by other city departments or offered from private sources. The inference to be drawn is that the Health Department has no reserve for emergencies, but is working under ordinary conditions under an inelastic system and close to its extreme capacity—"carrying a peak load" as the engineers express it. It is not lack of willingness, nor lack of initiative, nor lack of brains, nor lack of money, (the Commissioner has announced that the city will supply him with all needful funds) but lack of an organization equipped with a proper reserve to meet emergencies. This is precisely the situation that the country at large presents in its military and economic arrangements. We trust to shrewdness and chance when we should exercise reasonable prevision and coordinate our resources so that emergencies shall be amply provided for no matter how grave they may be. The criticism is not leveled at the work the Health Department has done, but what it should have been prepared to do. Our city government has boasted that it stands for efficiency and economy; there are those who believe that its efficiency is largely dependent on the theories of enthusiastic amateurs and its economy actuated by a desire to make a good showing on paper without regard to working efficiency. H. G. W.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of the Society held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, on Thursday, Nov. 4th, 1915.

The President, Roger Durham, M. D., in the Chair.

Program.

Report of cases:
A. (1) Perforated Gastric Ulcer. Operation. Patient.
(2) Thyrotoxicosis Operation. Intratracheal Insufflation. Patient.
(3) Thyrotoxicosis. Operation. (Local Anesthesia). Patient.
Frank M. Brown, M.D.
B. (1) Carcinoma of Breast. History. Patient.
(2) Primary Carcinoma of Liver. Operation.
(3) Haemophilia.
(4) Appendix Case. Secondary Obstruction. Subsequent History.
John L. Bauer, M.D.
C. (1) Diverticulitis. Specimen.
(2) Stab Wound of Head with Blade in Brain. Specimen.
Mathias Figueira, M.D.
Paper: "Transvesical Prostatectomy: A Discussion of the Technic Involved in the Two-Stage Operation. Lantern Slide Demonstration." Patients.
Paul M. Pilcher, M.D.
(By request.)
Discussion opened by George L. Buist, M.D., and Burton Harris, M.D.

Perforated Gastric Ulcer. Operation. Patient.

Frank E. Brown, M.D.

The first case which I have to present is one of rupture of a gastric ulcer. The patient is 60 years of age.

Past History: Negative.

The present trouble dated back two years before operation. From that time up to the time of operation at times she presented symptoms of gastric ulcer, which were not constant, but which would fluctuate, depending upon diet and general care of herself. In general, the symptoms were, first, hyperacidity and pain about three hours after meals, relieved by bicarbonate of soda, a certain amount of nausea and occasionally a slight trace of blood in the stools. There was epigastric tenderness following a particular indiscretion in diet the evening before the time of rupture. She was engaged in muscular exertion and at that time was seized with a sharp epigastric pain. This pain became constant and when I saw her, about two hours after the beginning of the trouble, it had assumed a general peritonitic character. She was in quite pronounced shock; abdomen tympanitic and distended, with diminution of liver dullness. I might mention that at this time there was also considerable heart irregularity and a rapid and weak pulse. On removal to the hospital, five hours after the perforation, a right rectus incision showed a ruptured ulcer at the usual site on the anterior surface of the lesser curvature. The abdomen was filled with gastric contents. The ulcer was sutured and while her condition was not of the best, it was deemed advisable to do a posterior gastroenterostomy, chiefly on account of the experience which I had had with her before the operation in the matter of indiscretions of diet and inability to control the same. After cleaning the abdominal cavity the patient was returned to her room. There was no particular after-history. She left the hospital three weeks after the operation and has been perfectly well with the exception of a cerain amount of myocardial insufficiency. She has been engaged in active work for the last four or five months and has had no trouble.

There is nothing to see in this particular case except the usual right rectus incision.

The question in this case, to my mind, was whether or not we are justified in prolonging the operation and subjecting the patient to the added shock of doing a gastroenterostomy. I think that in this particular case we were right in performing the second operation.

Thyrotoxicosis. Operation. Intratracheal Insufflation. Patient.

Frank E. Brown, M.D.

The first case of Graves' disease shows a typical text book picture.

Patient, 35 years of age.

Past History: Negative with the exception that at 18 there was a moderate enlargement of the thyroid for a period of a year. The present trouble dates two years before operation. At that time she noticed that there was a certain amount of nervousness which rapidly became worse and shortly following that enlargement of the thyroid was noticed, then palpitation and increasing dyspnea. The dyspnea at first was present simply upon exertion, later becoming constant with prostration and bulging of the arteries. This picture became more and more marked until the patient was unable to even cross the floor without difficulty, the dyspnea and weakness being so pronounced; and at the time I first saw her the pulse, with the patient at rest, was ranging between 130 and 140. Upon exertion the radial pulse was imperceptible. There was marked enlargement of the thyroid, chiefly of the right lobe and isthmus, extreme weakness, constant dyspnea, exophthalmos to a marked degree, heart markedly enlarged and double murmurs at the different valves.

The pulse reading in this particular case was of particular interest. The systolic pressure before operation was 100; the diastolic was in the neighborhood of 50.

Laryngological examination was made and showed pressure upon the trachea.

Upon entering the hospital I kept her in bed two weeks and used various things—digitalis, morphia and ice bag over the heart, and after a period of fifteen days resorted to intratracheal anesthesia, feeling that the pressure upon the trachea did not justify local anesthesia or ether in the usual method.

In the recumbent position the patient was practically unable to get her breath on account of the apparent increased pressure upon the trachea.

The anesthetic was given by Dr. Stone in a very satisfactory way. The operation itself was simply removal of the right lobe of the thyroid and one-half of the isthmus. No particular difficulties were experienced except that the gland being so large and soft, there was quite considerable bleeding. There was no post-operative toxemia. Convalescence in the hospital was entirely uneventful. She left the hospital two weeks after the operation.

This particular case presented a picture of myocardial weakness—extreme myocardial weakness, dilatation of the heart, apparently due to a marked chronic toxemia of the thyroid, and dyspnea, due in part to this condition and in part to the pressure of the trachea.

I may add that while in the hospital she mentioned that her period had been missed one or two times. I assured her that this was due to her general condition and after she left my sight she was delivered of twins and had a normal puerperium and normal labor. Since then she has been in the best of health she has been in for a number of years.

Thyrotoxicosis. Operation. (Local Anesthesia.) Patient.

Frank E. Brown, M.D.

Second case of Graves' disease.

Past History: Negative.

About a year and a half before operation the patient went through what was termed at that time a severe attack of grip, but following this there was extreme prostration with persistent cough. Shortly following this palpitation of the heart and dyspnea upon excitement or exertion began to manifest itself. Six months before operation there was first noticed slight enlargement of the thyroid. These symptoms of dyspnea (I should mention extreme nervousness) became more and more marked until the slightest excitement would send the patient into a highly toxic condition. Examination showed very slight enlargement of the thyroid, tachycardia, the heart with the patient at rest running around 129, extreme nervousness, slight exophthalmos. The blood pressure in this case ranged nearly normal, 130-140 systolic; 90-100 diastolic.

On account of the extreme restless condition of the patient and the ease with which she was influenced by any excitement, the same plan was followed as in the preceding case—keeping her in bed for two weeks before the operation. I, however, did not feel at all satisfied that this was a case for ether anesthesia and after explaining the situation to the patient she left the matter entirely in my own hands. On the thirteenth or fourteenth day she was removed to the operating room and while in the ante-room the thought of being brought to the operating room brought on a marked dyspnea with cyanosis, ashy-grayish-black skin, tachycardia, radial pulse imperceptible and a typical picture of extreme thyrotoxicosis, and the condition was such that it was absolutely impossible to go ahead. We returned her to her room and the condition passed off in a few days and again on the seventeenth day after admission to the hospital she was brought back to the operating room. This time no such condition supervened and under ½% novocain solution the right lobe and isthmus were removed. This was a very satisfactory method of anesthesia in this particular case. Pain was experienced only upon the removal of the isthmus from the trachea and in suturing the lower part of the skin flap. The novocain by that time had pretty much disappeared.

The second case presented a different picture, one in which the general organs of the body had not been chronically poisoned, but where there was an extremely active toxic gland that upon excitement or exertion, chiefly excitement, would simply overwhelm the body with the toxemia of the thyroid. I believe that I wouldn't have been able to go ahead with this case under ether anesthesia. I mean judging by the trouble I had earlier with her outside and also the acute thyrotoxicosis which she had on first coming to the operating room. She has been in active life since then and has been perfectly well, most of the symptoms of thyroid poisoning, except slight nervousness under extreme exertion, having disappeared.

Carcinoma of Breast. History. Patient.

John L. Bauer, M.D.

Mrs. Z., 63 years of age, born in Germany.

For four or five years she had been annoyed by a lump in the left breast; occasionally burning pain. The lump gradually became larger. At first it was the size of a marble. Her doctor advised her not to be operated until the skin became sore or red. The patient having lost a husband after an operation was willing to postpone that ordeal. On May 23d, 1914, the patient was first examined by us. There was a tumor, the size of a lemon, in the upper outer quadrant of the left breast, which was painful, the nipple retracted and the skin reddened and involved. The mass was fixed to the muscle. The glands in the axilla were palpable. The patient was operated on at the German hospital three days later, May 26th, 1914. As will be seen, when the patient is presented, the operation was extensive, everything being removed in one mass, including the fascia covering the sheath of the rectus abdominis muscle, the pectoral muscles, serrations of serratus magnus, glands and all the skin over the breast, with part of the skin usually left at the upper part ofthe anterior axilla. While no thought during the operation had been given to how the wound could be covered with skin, with very little plastic work and supreme adduction of the arm over the chest, this was accomplished without skingrafting. At one point where three flaps meet, there was a very small amount of slough along the edge of one flap. Three weeks after operation and thereafter for five or six weeks, the patient regularly visited Dr. Adams' office twice weekly for prophylactic X-ray treatment. The patient led as ideal a life as possible, out of doors, etc. Early exercises brought about a full use of the arm. There was never any edema or swelling. This case has been brought to your kind attention because we still have among us doctors who counsel delay in cases where delay is so costly, because the patient was seen on the operating table by several doctors whose advice we respect highly and who said it was most foolish to attempt anything because of the wide involvement, and because it is now over seventeen months and the patient is in excellent condition.

Of course, we realize that patients with scirrhous carcinoma (that was the report of the case) as a rule may live a year or two and with operation may have added on a year to eighteen months more, even at that stage.

We will present the patient.

Primary Carcinoma of the Liver. Operation.

John L. Bauer, M.D.

The second case is one of primary carcinoma of the liver with operation.

This is a rare form of hepatic tumor and appears in several forms: (1) Massive development, generally found in the right lobe of the liver and well differentiated from sound liver tissue; (2) Infiltrating form; (3) Nodular growths, usually one primary growth with secondary nodules in the vicinity. (Keen reported in the Annals of Surgery, that he had removed almost the entire left lobe successfully for this nodular condition). (4) Carcinoma with cirrhosis, which embraces one-third of the cases of primary carcinoma of the liver.

Patient, Mr. E. B., 59 years of age, American. Always in good health; moderate user of alcohol; never intemperate in eating; enjoyed mostly, as a pastime, long walks.

About July, 1913, he first felt pain in the epigastrium after eating; only occasional pain, short in duration, passing away after a few minutes; was able to take his usual long walks with comfort.

On the Saturday before Labor Day, 1913, he experienced severe pain after eating, *at once* after eating, which was reflected to the back and later the patient discovered that he could not walk with comfort and pleasure. This attack of pain lasted about two hours, the patient then feeling again perfectly comfortable. About October 1st, 1913, the pain was then a regular symptom after eating, but now never disappeared entirely. It was worse after taking food. He had no nausea and never vomited. The patient now began to lose weight.

The doctor of the patient, when consulted in August, diagnosed the case as one of ulcer of the stomach and that is a reason why this case is reported tonight. From the history, it is quite natural to conclude as the doctor did. The doctor did not discover any enlargement of the stomach or liver, but some tenderness was elicited in the epigastrium. When patient began to lose weight rapidly in October and suffered constant pain, always worse after eating, cancer of the stomach was diagnosed.

November 8th, 1913, admission to the German Hospital. Three days later, November 11th, after preliminary lavage and other preparation, occurred the operation. An upper median incision opened the abdomen; free bloody serum was present; stomach and all organs, except the liver, apparently absolutely normal. The liver, over the anterior and posterior surfaces, was covered with carcinomatous nodules about the size of 25 or 50c pieces, but none immediately on the free edge of the liver. A total removal of the liver would have been necessary. The patient left the hospital ten days later and died at his home on January 2nd, 1914.

Dr. Richard W. Westbrook, in opening the discussion, said: "I did not hear all of that description, as I was late in getting here, but I do not think that it ought to go as primary carcinoma of the liver, which, of course, is quite rare. As I understood the description, the liver was studded with carcinomatous nodules. That in itself, I think, would be evidence in favor of a disseminated. secondary metastatic process and I think that careful search along the gastrointestinal tract would result in disclosing the primary lesion somewhere. Of course, careful search was made, but I mean that even with very careful search at times the primary lesion is overlooked.

"I had a case not very long ago that illustrated that very well. This particular patient had failed gradually, but had no palpable enlargement of the liver and had no stomach symptoms to speak of—simply a failure with some slight discomfort in the upper abdomen. We considered it a case of possible malignant disease and an exploratory incision showed the same kind of a liver mentioned. The liver was studded with what we considered were secondary deposits and on search along the gastrointestinal tract it was with considerable difficulty that we finally located a small growth in the cardiac end of the stomach, high up near the esophagus (an unusual place), which did not make any symptoms, but which, I think, without question was the primary source of the carcinoma of the liver."

Dr. John L. Bauer, in discussion, said: "I would like to ask Dr. Westbrook who discussed the case of primary carcinoma of the liver whether he referred to No. (3) of the general classification or to my case in particular, when he said that he was inclined to believe that where No. (1) of the classification (which I gave) is present that that form is surely primary, and where the nodular condition is present, it is not so likely to be primary.

"The first form of the classification, there being four forms, speaks of a massive development or that where a nodule forms or the cancer starts in the liver, and goes on to a massive development, but this classification also recognizes another form beginning with a primary nodule with other nodules following, the case reported here being an example of the latter. As near as I could make out, there were fourteen nodules in the liver, most of them to the left, contrary to the fact that in most instances they are generally found to the right."

Dr. Richard W. Westbrook, in discussion, said: "Perhaps I misunderstood the full description of it, but I think that where the liver is generally studded with carcinomatous nodules one may pretty safely infer that it is a secondary process. I have seen but one case of primary carcinoma of the liver where we were able to look very carefully over all the viscera and that particular case showed a large nodule involving the surrounding liver tissue, perhaps nearly though not quite as large as one's fist, and it was palpable. There was a question there at one time of a possible gumma, but that was disproved by pathological examination, but I believe that many cases which are considered to be primary carcinoma of the liver, under the difficulties of complete examination for the primary focus in the gastrointestinal tract at the time of operation, are wrongly so considered, and, from my understanding of the present description, my feeling was that if there were a thoroughly complete opportunity for examination, which I do not believe obtains in operations always, it would be shown to be a secondary carcinoma. Nothing short of a complete autopsy will eliminate the possibility of a primary focus."

Dr. John L. Bauer, in closing the discussion, said: "I have nothing to add except to say that Dr. Brown has just told me of a case he saw in which Dr. George R. Fowler found two nodules in the liver about the same size that I spoke of."

Hemophilia.

John L. Bauer, M.D.

This case we venture to report because of the simple technique and the prompt result. The few cases in which this procedure has been followed have been successful.

Patient, S. M., 3½ years of age.

Admitted to the German Hospital, medical service, August 7th, 1915, at 7:30 a. m. The patient had been treated for five days at home by the family physician. The medical interne obtained the following facts:

On August 2nd, five days ago, the patient fell against a chair in his home, striking on his chin. Bleeding was seen from the chin and gums. It has never stopped. The patient is in a weak condition from loss of blood.

The family history shows that the mother of the patient had three brothers, all bleeders and all now dead. Mother and father both healthy. The patient is the only child.

Since birth, under doctor's care after circumcision, troublesome bleeding for a number of days. He has had several blood transfusions. On the slightest injury the patient bleeds. Several times he has had hematomata of the testicles from falls.

Medical treatment: August 7th, 1915, day of admission—Calcium lactate, grains 5, repeat in 30 minutes, repeat again in one hour. Later give calcium lactate, grains 10, every 3 hours. Apply tincture of the cholride of iron swabs to gums. Force fluids.

August 7th, 1915, p. m.—Horse serum, 5 c. c. hypodermatically.

August 8th, 1915—Emetine hydrochloride, grain 1/10, every 6 hours hypodermatically.

Monsell's solution applied to wound on chin.

Hot water bottles, etc.

August 9th, 1915, calcium lactate, increase to grains 20, every 3 hours. Strychnine sulphate, grain 1/120, every 4 hours. Murphy drip 2 hours on, 2 hours off. Dissolve calcium lactate, grains 30, in same. Pituitrin m. 5, hypodermatically, repeat in 45 minutes.

Brandy ½ drachm in milk 2 oz., every 2 hours.

August 9th, evening, Dr. Koch asked me to see the patient with him, and about 10:00 p. m., the father being the donor, a transfer of 70 c. c. of blood was made.

The patient was cold and clammy, almost bloodless. The gums and conjunctivae, etc., were blanched. There was one bleeding point just behind the left incisor of the upper jaw. There was a small bleeding area in the midline of the chin, a very slight abrasion. The heart action was weak and rapid.

The blood was taken from a vein of the father's left forearm. It was allowed to flow over into an aseptic glass vessel and by means of several Luer syringes injected into the loose subcutaneous tissues between the shoulder-blades. Seventy c. c. of blood in all. This transfer occurred about eight full days after the mishap. During the night the bleeding stopped for one and a half hours.

August 10th, a. m., no bleeding from wound on chin; slight oozing from mouth.

August 10th, p. m., no bleeding.

August 11th, a. m., no bleeding from chin; slightly from mouth.

August 11th, p. m., no bleeding all afternoon.

August 12th, no bleeding.

August 16th, patient crying because of pain in neck; no rise in temperature and pain apparently had no significance.

At the time of the transfer of blood the temperature was 101 and the pulse 160 plus. The patient was very critical and irrational at times.

For three or four days after the blood transfer there were periods of quiet, but he was generally restless and irrational.

The temperature and pulse gradually lowered after the "transfer." The medical service cared for the anemia and the patient was discharged September 7th, 1915, one month after entrance.

Dr. Warren L. Duffield, in opening the discussion, said: "I would like to briefly report a case in which I did a transfusion, simply for the purpose of calling to mind that ever-present danger, hemolysis. I was called upon to do a transfusion in a woman who had had a placenta praevia complicated by sepsis. Her husband was the only available donor and we got in touch with him after considerable delay. The woman was in an almost comatose condition and was delirious. The transfusion was readily and satisfactorily done by the aid of the Elsberg cannula. Almost the moment that the blood commenced to flow from the donor's artery to her veins the respiration changed in character and became deeply sighing and she made rather inarticulate outcries as though in pain. I had her examined at that time by one who was competent and he could find no sign of dilatation of the right heart. I thought that possibly the blood was going across in rather too strong a current, but could find no heart change at all and persisted for a time with the transfusion. The patient was returned to the ward and her condition became worse and she died I should judge about three hours later. Fortunately, some blood smears were made before her death and on examination the red blood cells were found almost completely disintergrated, about as many red cells appearing in the slides as white cells, apparently a case of hemolysis."

Appendix Case. Secondary Obstruction. Subsequent History.

John L. Bauer, M.D.

The fourth case I am hoping to have a little discussion on because of the subsequent condition.

Patient, Miss G., age 27, American.

On July 12th, 1914, while cooking, the patient was taken with cramplike pains in the epigastrium, became nauseated, but did not vomit until three days later. She continued at her work. The pain finally located in the left lower quadrant of the abdomen. Dr. Ross, of Sayville, who attended her, recommended operation and she insisted on traveling to Brooklyn in a limousine.

Our first knowledge of her case was obtained from the patient in our office. She could scarcely walk in. There was no question as to the diagnosis.

The patient had been miserable for several years. She had had previous attacks of pain in the abdomen. She always suffered greatly at menstruation; occasional attacks of diarrhea and burning and frequent urination. Appetite generally poor and very anemic.

On the fourth day of the disease, July 16th, immediately from our office, the patient went to the German Hospital and was operated as soon as possible.

Operation: Median incision. Apparently everything in the lower abdomen was adherent. It was as if glue had been poured in. By careful separation of several layers of coils of intestines we found the appendix in the midline, partly in the pelvis, closely associated with the right tube and uterus. It was necessary to remove the appendix by severing it at the base first and then working towards the tip. The appendix was badly inflamed, greatly swollen and ready to burst. Having removed it without mishap and owing to the dense adhesions everywhere, it was decided to take a chance without drainage, believing any effectual drainage measure might increase the adhesions. There was then no intestinal obstruction, although the bladder and other pelvic and lower abdominal organs were all adherent and one could expect obstruction to occur. The abdomen was tightly closed. The wound healed by first intention. The patient was comfortable after the operation.

On admission the temperature, pulse and respiration were 101, 126 and 40 respectively. On the fourth day after operation the temperature, pulse and respiration were normal. The patient was discharged on the thirteenth day, feeling fine, except for annoyance with urination, spoken of as one of the chronic symptoms above, and accounted for by the adherent bladder.

About three weeks after operation the patient began to have some difficulty with the bowel movement. This increased and her appetite, which had been none too good, decreased until one month after the first operation. The patient returned to the hospital with pain over the entire abdomen, especially in the epigastrium, vomiting and no bowel movement for several days, except what would be washed away from the lower bowel by enemata. The patient became rapidly distended and especially tender over the entire left side of the abdomen.

Second operation: The abdomen was opened in the median line; former skin cicatrix removed. The small gut was very red and distended. Everything was adherent. A strangulating band on the ileum was found about 15 inches from the cecum. Several coils of small intestine were carefully separated from one another to make it possible to reach this band. These last 15 inches could not be brought up satisfactorily, being massed in adhesions, but the band was released and an anastomosis done between the ileum and ascending colon. The abdomen was closed. No drains. Temperature 99.4; pulse 102; respiration 38 on admission.

The patient made an uninterrupted recovery.

The first day after operation nothing by mouth; on second day small amounts of liquid, gradually increased. The patient returned home in two weeks, where she rested for several months, and then took a western trip, returning six months later. Since the patient's return she has no appetite, is always nauseated in the a. m., never vomits, eats no breakfast, a light meal at midday and supper hour. Weight is increased. Color is good. Blood examinations before trip and now show improvement. Urination sometimes burns and at times frequency is very annoying. Apparently the patient is suffering from adhesions still. Possibly we have 15 inches of ileum, short-circuited, acting as a reservoir of pollution.

Stab Wound of Head With Blade in Brain. Specimen.

Mathias Figueira, M.D.

The history of this case is an interesting one and the specimen, as you will see, is interesting, too.

This man was brought to the hospital without any history. He was picked up by the police one night in the street, drunk, as they thought, and sent to the hospital. I saw him the next morning. He lay on his back in a semicomatose condition. On being disturbed he would move uneasily, but would not wake up. The pulse and temperature were normal. The urine was normal. The pupils were regular, but sluggish. The reflexes were not well marked. In the course of the examination I passed my hand over his head and found quite a marked lump about two inches from the middle of the upper part of the right parietal bone in the neighborhood of the center for the arm. The lump was not hard and on palpation had a peculiar grating sound, which I could not explain. He was sent to the X-ray room and the radiographic picture disclosed what I will show you here. It disclosed the vault of the skull and sticking into it was the blade of a knife one inch long by actual measurement. The man was taken to the operating room and as the knife blade was broken off flush with the skull we could not get hold of it. I applied a trephine and cut out a button of bone holding the knife blade as you will see it here. There was a very beautiful condition of the brain showing the wonderful conservative powers of nature in cases of this kind. From the constant motion of the brain with respiration and the action of the heart, that knife blade, which was fast in the skull, had gradually loosened in the bone, so it moved with the brain. If you look at the specimen you will see that that blade is loose in the bone. The bone had become absorbed by the constant beating of the brain and around the knife blade nature had built a wall of connective tissue to protect the brain.

The man recovered and before he was discharged I obtained from him the following history:

A year before this he was in a fight in a barroom and was struck in the head, as he said. He was taken in an ambulance to some hospital and there his wound was sewed up and his head bandaged and in the course of a week he was sent home cured. He went along for one year, attending to his business as a pedlar, without any symptoms at all. At the end of that time one day he got drunk and that was all he remembered until he found himself in the hospital after he was picked up in the street by the police, and this is the result of the case. He got entirely well and has been well ever since and I expected to present him to you tonight, but could not do so.

Diverticulitis. Specimen.

Mathias Figueira, M.D.

The next case is one of diverticulitis. I have the specimen here. This represents the lower part of the ileum and here you see a diverticulitis on the surface of the ileum opposite the attachment of the mesentery.

This was a man 46 years old. He had always been well with the exception of attacks of indigestion and eructations of gas. About a week previous to the time that I saw him he was taken sick with pains and tired feeling and intestinal symptoms in the form of loss of appetite and constipation. He was treated by his doctor for this one week, but did not improve and commenced to develop marked intestinal symptoms in the form of vomiting and obstinate constipation.

I was then called to see him with his doctor. I found a man who was well-nourished and in fair condition. The tongue was moderately coated; pulse 90; respiration normal; temperature varied from 99-100, as seen from the record on the chart. The heart and lungs were normal. The liver was not enlarged. There was moderate distention of the bowels with marked tenderness and pain on deep pressure on the left side of the abdomen, below Poupart's ligament. Rectal examination revealed the same tenderness on the left side of the pelvis, but no tumor. The urine was normal. Blood examination, twice repeated, showed only a very moderate degree of leukocytosis. The patient had vomiting at intervals and could not retain food, nor could the bowels be moved by medicine. He was unable to sleep. It was advised to use lavage, repeated at intervals, the use of high enemata and the use of morphine to quiet the pain and give him sleep, the morphine to be given hypodermatically. Under this treatment he improved for about one day and then his condtion became worse and he developed marked symptoms of intestinal obstruction and it was decided that an operation was the proper thing to do in the case. Before operation, however, we called in another surgeon and he agreed with us as to the proper way to treat the case—by operation. The patient was accordingly removed to the hospital and operated upon the same day. When the abdomen was opened there was a discharge of turbid serum mixed with flakes of lymph. The bowels were found to be distended and congested. By pulling the gut down and guided by the redness and deposits of lymph, we soon came to the place of obstruction, and by manipulation we loosened and were able to bring up the diverticulum and as we brought it up there were several ounces of pus that came with it. The diverticulum was gangrenous. It was black and the gut surrounding it was deeply congested and inflamed. A resection was done in the usual way and that portion of the gut was removed with it. A lateral anastomosis was done and the patient put to bed. When he came out of the ether he developed maniacal delusions and became so violent that he had to be strapped in bed. Peritonitis developed and he died of peritonitis the second day after operation.

The points that I wish to call your attention to in this case are:

First, the sudden onset of symptoms in a case that had not presented any symptoms at all previously. It came on suddenly and inside of a week from the beginning of the symptoms the man required operation and this condition of things was found.

The second point that I wish to call attention to is the fact that with an acute inflammatory condition his pulse was about 90, the temperature before operation never went above 100 and his leukocytosis was very little indeed—not marked at all. Three surgeons saw the case, all good men and none of us had suggested to our minds an acute diverticulitis.

Hemophilia.

John L. Bauer, M.D.

Dr. Mathias Figueira, in discussion, said: After referring to an article by Lewisohn on this subject and the use of sodium citrate, Dr. Figueira went on to say:

"In all these cases there are means by which the condition of the blood of the donor in relation to the blood of the recipient can be ascertained in regard to hemolysis, and I think that unless one is very much pressed for time this should always be a preliminary step, because although some have reported a large number of cases without any accident, Lewisohn speaks of a case that resulted disastrously. If the blood is given by a near relative, like a sister or brother, it will obviate this great danger.

"'In all these cases the blood should be tested, not only as to hemolysis, but also as to anaphylaxis."

Primary Carcinoma of the Liver.—Operation.

John L. Bauer, M.D.

Dr. Mathias Figueira, in discussion, said: "I would like to ask how in a case in which one finds nodules in the liver and then in searching finds another cancerous growth, you are going to tell that it is a primary growth and not a secondary deposit due to a deposit that was primary in the liver."

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THE OCULAR SYMPTOMS OF SYPHILIS.

By James Cole Hancock, M.D.
Brooklyn-New York.

THE tendency of ophthalmologists to give a serious thought to syphilis when investigating the etiologic possibilities of a seemingly obscure ocular lesion is to be commended for it is surprising how frequently their investigations may be brought to a close here.

Even in these days when we have come to so nearly depend upon the Wassermann reaction for the diagnosis of, especially, inherited syphilis we must not forget that this reaction is not always conclusive, either when positive or negative, and that corroborative evidence, while not quite so necessary as formerly, is still of great value and not to be disregarded.

Perhaps of all signs of inherited syphilis the most importance has been ascribed to the modifications in the condition and shape of the teeth, in children, and we are certainly most liable to find such modifications in the teeth of children suffering from diffuse interstitial keratitis. Hutchinson and Fournier have given to ophthalmology the valuable results of their most extensive investigations in this connection, drawing especial attention to the notched incisors, pegged canines and nodulated molars; peculiarities found among a very large number of children with inherited syphilis. There is no doubt, however, that a certain number of these children, even among those who develop specific interstitial keratitis, do not present these conditions of the teeth and, perhaps, do not present them so often now as in former years when the teeth of children received much less attention and care, but this lessens very little the importance of the corroborative sign. Other signs indicative of inherited syphilis are imperfect conformation of the bones of the orbit, prominent frontal protuberances, imperfect development of the upper maxillary bones, sunken nose, enlarged glands, enlargement of the liver and pancreas and scars around the mouth. My own opinion is that there are cases where all reactions fail, and all signs, in which there may be a latent taint from a former generation which, if not of sufficient virulence to initiate ocular lesions, is certainly sufficient to have an influence in making the subject more susceptible. My belief that a syphilitic influence may extend far beyond the first generation is being strengthened daily.

A study of the ocular symptoms of syphilis is, probably, best begun with a study of syphilitic lesions occurring in the immediate environment of the eye and its appendages, and the influences upon them that may be, and often are, exerted by these lesions. Congential syphilis may be responsible for an imperfectly formed orbit and, of course, may, mechanically, interfere with the proper development of the eye. Malformation of the orbit may also result in an absence of a proper relation between the orbital foramina and the elements passing through them, and this may be attended with lamentable results. Thickening of the bony walls of the orbit, sometimes a syphilitic lesion, or the result of one nearby, is often attended by pressure symptoms manifested through the ocular system in various ways. Periostitis, caries of orbital bones, periosteal gumma, exostoses, osteoma and orbital phlegmon, are occasionally found in the orbit, and all may be of syphilitic origin.

Lachrymal System: True syphilitic lesions of the lachrymal gland must be very rare as they are but seldom mentioned in ophthalmic literature. The lachrymal puncta may be encroached upon by syphilitic lesions in the immediate vicinity, or may be displaced, through the same agency, to an extent that may interfere with their proper function. The lachrymal, or nasal, duct is much more apt to be affected than other parts of the lachrymal system, for here there may be encroachment upon the calibre, owing to bone disease due to syphilis, or a dacryo-cystitis may easily originate in an extension of inflammation from syphilitically inflamed parts nearby. Dacryo-cytitis, especially among babies and very young children, has been a frequent occurrence in my practice and inherited syphilis was, unquestionably, present in a very large number of these cases.

Lids: While an initial syphilitic lesion in the skin surface of the lid is naturally rare it must be remembered that it has been found here. Other syphilitic lesions are more common and K. K. Wheelock describes tubercular syphilides, including papules and tubercules, rupial ulcerations and gummata. J. Hutchinson writes of a peculiar form of blepharitis, as due to syphilis, consisting of sharply defined ulcerations extending to the skin of the lid. There is a distinctly syphilitic tarsitis, occurring, usually, late and attended by thickening of the lid that, in some cases, becomes very marked. This was first described by Fuchs.

Conjunctiva: While both the palpebral and occular conjunctivae are susceptible to primary syphilitic infection this accident must be an unusually rare one. Upon both there may be syphilitic mucous patches, specific ulcerations and extensions of syphilitic skin eruptions. H. D. Noyes wrote of what he considered a rare characteristic ulcer of the conjunctiva as elevated, with a broad thickened base, and having a tendency to encroach upon the cornea. R. W. Taylor reports a case of gummatous infiltration of the caruncle.

Sclera: While syphilis seems not to affect the sclera as frequently as do gout and rheumatism it does exert an influence here from time to time. Episcleritis is more rarely a syphilitic expression than is scleritis. Scleritis seldom develops without implicating the ciliary body and this rule holds good when syphilis is the etiologic factor. Many investigators believe it a question as to which, scleritis or cyclitis, is usually the exciting influence. While there is no tendency to the formation of pus in syphilitic scleritis the disease often leaves its mark in a bluish discoloration around the corneal margin showing that an inflammation intense enough to cause permanent tissue change has existed. Due to contraction, owing to this tissue change, astigmatism may be one of the results of these attacks. Gumma of the sclera has been reported but not, so far as my knowledge goes, as due to inherited syphilis. Notwithstanding the apparent infrequency of syphilis as a cause in the inception and development of scleral disease, it is my opinion that a modified anti-syphilitic treatment should be added to other treatment used in all cases not proven to be non-syphilitic. Even the innocent cases seem to benefit from the use of mercury.

CORNEA: Notwithstanding the importance and significance of syphilitic inflammation in the various other ocular structures perhaps the most attention has been directed toward and, it would certainly seem, the most has been written about syphilitic corneal manifestations. Almost any form of corneal lesion presents to the patient the most alarming aspects, owing to the impaired vision, and to the ophthalmologist problems the solution of which is apt to call urgently upon his store of patience and skill. Interstitial keratitis, being more common, has received more attention in ophthalmic literature than other forms of syphilitic keratitis. A question very exhaustively discussed is: Does interstitial keratitis ever result directly from acquired syphilis? Writers of the comparatively recent past were practically unanimous in asserting that acquired syphilis was never the cause of interstitial keratitis. The investigations of some later writers have, however, resulted in the bringing to light a sufficient number of cases of interstitial keratitis in patients with acquired syphilis, and that alone, to fully prove that acquired syphilis may be causative. W. H. Wilder has reported three cases, A. E. Davis two, and J. B. Lawford three. When reporting his cases (1908) A. E. Davis stated that but one hundred cases had to that time been reported in ophthalmic literature, so far as he could ascertain, and that but twelve of these had been reported from America. Owing to a lack of full appreciation of the extreme rarity of these cases is due the delay upon my part in reporting one coming into my practice within the past few months. This patient gave no history of inherited syphilis, and the evidence to the contrary seemed reliable. He gave a clear history of having had a primary syphilitic infection about two years before consulting me, had given a positive reaction to a Wassermann test, and was being treated with salvarsan at the time he came. The irritation of the affected eye; and only one was affected; was not great nor were the photophobia and lachrymation excessive. Situated in the interstices of the lower and outer quadrant of the cornea were ten to fifteen whitish gray spots, or foci, with elevation of the corneal epithelium over the site of those situated most superficially. The patient was thirty-four years of age. Atropine and hot bathing were ordered and the patient's physician requested to repeat the salvarsan treatment. Although the patient remained at his duties as a stenographer, against orders, the keratitis had practically disappeared at the conclusion of about four weeks' treatment. Diffuse parenchymatous keratitis is regarded by many ophthalmologists as practically conclusive proof of inherited syphilis, by others as being due, in a vast majority of instances, to inherited syphilis, and by all as a most suspicious sign. Horner states that two-thirds of this form of keratitis are due to inherited syphilis, Mauthner says three-fourths; so you may go from one statistician to another, almost without limit, and you will still be uncertain as to the true percentage, but will have to admit that it must be a very large one. Most frequently the disorder makes its entry between the fourth and twelfth years. J. Hutchinson reports one case as early as in the first year and in my own practice there has been one that began in the thirty-first year. This last is a later age than any reported that have come to my notice. Here the diffuse keratitis followed a most classical course, extending over many weeks in the eye first affected, beginning in the second just as the first had almost cleared, and following a course quite identical with that followed in the first. Although the keratitis was of a very marked type very little corneal opacity remained at the final resolution. The details are given only because of the age of the patient. While there are those who doubt that constitutional treatment does any real good in interstitial keratitis, advancing the argument that the disease goes from one to the other eye at a time when the patient should be under the full influence of constitutional treatment, there can be no serious doubt that anti-syphilitic treatment should always be employed where there is the least suspicion of a syphilitic origin. My own opinion is that anti-syphilitic treatment should be employed in all cases of diffuse interstitial keratitis, for there can be no harm in using it, in a modified form, in those cases that seem innocent and; and this should never be forgotten; there is every probability that a very slight taint may exert a considerable influence under favorable circumstances, even a taint too dilute to respond to tests. S. D. Risley has reported cases of diffuse interstitial keratitis treated with thyroid extract, and, it is my belief, these cases were due to inherited syphilis, and that the thyroid extract was added to anti-syphilitic treatment. The results were very satisfactory. Now there can be no present doubt that the secretion of the thyroid gland assists general metabolism, nor can there be that syphilis may, and often does, attack this gland and retard its function of secreting. So, given a cornea, in the tissue of which metabolism is materially interfered with, together with a thyroid gland not properly performing its function, it should be easy to believe that the administration of thyroid extract would be attended by beneficial results. Added to anti-syphilitic treatment in syphilitic corneal complications, especially in children, should be tonics, good food and an environment as healthful and clean as possible, and plenty of fresh air. Other varieties of keratitis are the isolated foci, two or three in number, appearing in various parts of the corneal interstices, and having the appearance of small pus collections, keratitis punctata which may be superficial, interstitial, or in, or upon, Descemet's membrane. The last variety, known as descemetitis, is very important as it probably means that there is an inflammation of the uveal tract, the descemetitis being really secondary to that. Probably, most frequently, the spots on Descemet's membrane are upon the posterior surface and come from the inflamed ciliary body. Two cases of descemetitis have come under my observation during the past few months. One had given a positive Wassermann reaction and had been under anti-syphilitic treatment for some time before her first visit to me, and there were but a very few small spots upon Descemet's membrane. There were not other signs of uveal inflammation and the patient passed out of my care soon after her first visit, probably feeling that treatment for the eye condition was no longer necessary as she suffered so little inconvenience. The other case was, apparently, primarily, a serous iritis in a syphilitic patient, but two weeks after the inception of the attack, and when it had nearly subsided, fifteen to twenty small spots appeared upon Descemet's membrane, arranged in a pyramidal form, in the lower and outer quadrant, the base being directed downward with the apex at the corneal centre. Of course atropine and other local treatment had been ordered from the onset of the attack of iritis as well as anti-syphilitic treatment. The latter was given somewhat more vigorously upon the advent of the descemetitis, the lesion quickly responding and entirely disappearing within three weeks. Although it did not seem so at the time of onset the iritis in this case was probably secondary to a specific cyclitis. Corneal ulcers are not uncommon and, doubtless, some of them are the direct or indirect result of syphilis. Zeisel reports one case of corneal chancre, and a few cases of corneal gumma have been reported.

Iris and Ciliary Body: An iritis probably never occurs without some involvement of the ciliary body and, conversely, a cyclitis is probably always accompanied by a degree of iritis, so that it is quite necessary here to consider these two structures, the iris and ciliary body, to a great extent, together, and when the terms "iritis" and "cyclitis" are used alone it is not intended that the impression be conveyed that an inflammation of either can exist, often, absolutely independently of an inflammation of the other. Iritis due to acquired syphilis occurs, naturally, most frequently in adults and is usually a manifestation of the second stage. While both eyes may be involved it is most apt to be one and there does not seem to be any decided tendency to recurrence, this latter fact probably being due to the efficacy of treatment. The form of inflammation is usually the plastic which may be soon supplemented with the papulous, the papules being in the iris substance, and when near the pupillary margin sometimes quite surrounding it. Later the papules may break down and the debris be found in the lower part of the anterior chamber. While these papules are not always developed enough to be easily seen they are supposed by many to be present in all forms of syphilitic iritis. When, later, they are absorbed spots of iris atrophy may be found at their sites. The iritis of inherited syphilis, while it may come at any time, is most apt to occur in youth and early manhood and seems much more liable to affect both eyes and to be of the serous variety than when due to acquired syphilis. Often it takes the form of a serous irido-cyclitis and is apt to be accompanied by a descemetitis and, possibly, variations in ocular tensions. This form of specific irido-cyclitis sometimes accompanies diffuse parenchymatous keratitis and it may add greatly to the complications of this disease. Iritis gummosa may be an accompanying symptom of inherited syphilis. Various estimates have been made as to the percentage of iritis that is caused by syphilis but, beyond the generally conceded opinion that more than half of these cases are so caused, it is difficult to arrive, from ophthalmic literature, at anything like a uniform standard of percentage. My own opinion is so firm to the effect that the percentage is much greater than is generally supposed that, even in those cases in which there seems to be no patent reason for suspecting syphilis, my rule is to employ modified anti-syphilitic treatment as an adjunct to such other as may be used. To my mind there is no doubt whatever that in many cases where syphilis is in such dilution that it may not be able to act as an exciting cause, it may be able to act as a predisposing one, and that it often does so act. As the ciliary body and the iris receive the same blood supply and as their anatomical relation is so close it is quite easy to realize why any disorder of one should be so liable to extend its influence to the other. Naturally it would seem to be the case that the ciliary body is affected secondarily more frequently than the iris as, otherwise, the influence would be traveling in the face of the blood current, but there is evidence that it is the other way around sometimes. The plastic form of cyclitis is attended by pain that often seems almost unbearable and the accompanying exudate opens a way for sequelae that often have a lasting and, and it may be, a permanent influence. Cases of cyclitis occur in which there is swelling over the ciliary body at the corneal limbus and, occasionally, these tumor formations break down and, even when they do not, they may leave a permanent thickened ring around the corneal margin. While true gumma of the ciliary region is sometimes described it must be rare. Proper early treatment of primary syphilis will probably prevent the occurrence of iritis or cyclitis. When they do occur and are obstinate it is often recommended that sub-conjunctival injections be used and these are supposed to stimulate circulation through the blood vessels and lymph spaces. A salt solution is usually employed. To my mind the free use of dionin in solution of sufficient strength to produce marked reaction, with chemosis of the conjunctiva, is very useful as this not only seems to improve the circulation of lymph, but acts distinctly as a counter-irritant, and this latter action must be of great value in these cases. C. G. Savage claims that dionin is a solvent of plastic material, and that while atropine is pulling upon the adhesions, dionin weakens their holds. Of course all adhesions should be broken up, where possible, and even the powdered form of atropine may be used for this purpose but, in such case, the patient should be carefully watched for toxic symptoms. The attempt to break up adhesions should be persevered in only, however, so long as there seems reasonable hope of success, for beyond this point more harm than good may be done by constant traction upon the inflamed iris. A form of irido-cyclitis known as relapsing irido-cyclitis would probably be a much less frequent occurrence if the patient were seen early in the first attack, and the constitutional treatment continued sufficiently long after the attack had subsided to afford every chance to eradicate the syphilis.

LENS: The crystalline lens is probably only secondarily affected through syphilis in the same way it is through other diseases that are constitutional, and to the extent that the nutrition of the lens is interfered with.

CHOROID AND RETINA: The choroid is in such close anatomical relation to the retina that it would be difficult to conceive of an inflammation of the former without involvement, to a greater or less extent, of the latter. Notwithstanding this the claim is made that there may be an independent choroiditis and an independent retinitis, but a vast majority of cases must be cases of chorio-retinitis, and independent lesions, if they really do occur, must be of extreme rarity. A little license must be asked in connection with an attempt to describe the lesions of these structures, as those affecting each must be described, more or less, separately, even while the improbability, except in rare cases, perhaps, of an independent existence is fully appreciated. The exudative form of choroiditis is that form most frequently a symptom of syphilis. This may be limited to a few areas or scattered throughout the fundus. To my mind that form of exudative choroiditis most characteristic of syphilis is a group of exudative spots, usually in the macular region, from three to six or eight in number, of a dull gray color, with distinct outlines of circular form. These spots are each about one-eighth the size of the disc, and there has been an overlapping rather than a coalescing of the spots in all cases coming under my observation. The only case in which similar spots of exudative choroiditis have been seen by me, in a patient not syphilitic, was a case of interstitial nephritis, and here the spots were but two in number, one above and the other below the macular region, and separated by a considerable space. Chronic local atrophy of the choroid is apt to appear with syphilis and this is often seen in very large irregular patches. Syphilis is a fairly common cause of disseminated choroiditis and, according to A. H. Griffith, it is usually due to the acquired form, making its appearance from six to eight months after infection and, when due to the congenital form, may be seen at birth, but usually between six months and two years after. When occurring in children it may be accompanied by interstitial keratitis which starts sometime after its inception. Disseminated choroiditis is sometimes preceded by an iritis. Night blindness is a significant sign. The communication posteriorly with the intervaginal space of the optic nerve and anteriorly with the lymph spaces below Tenon's capsule must be remembered in a study of choroidal disease because of possible influences being communicated through these channels. A choroiditis is sometimes accompanied by a descemetitis. Syphilitic chorio-retinitis is usually characterized by the presence of fine vitreous opacities. Jacobson was the first to direct attention to the possibility of a retinitis independent of a choroidal inflammation. The correctness of this view was further strengthened by the investigations of Mauthner, Liebreich and von Graefe, and Hirschberg claims that there are several forms of independent syphilitic retinitis. One important fact to be remembered here is that slight haziness of the vitreous, often found with choroiditis, may give a healthy retina, or healthy portions of a retina, an inflamed aspect. The various forms of syphilitic retinitis reported to have been observed as independent processes are diffuse syphilitic retinitis, relapsing central syphilitic retinitis, considered by von Graefe a very late symptom of syphilis and one in which the vision gradually diminishes between relapses, and haemorrhagic syphilitic retinitis, supposed to be exceedingly rare as an independent lesion. Syphilitic arteritis of the retina may occur and, probably, is a condition similar to Heuber's disease of the cerebral arteries accompanying cerebral syphilis. Retinitis proliferans is occasionally seen in syphilitic patients, and Swanzy reports a case of retinitis pigmentosa apparently caused by inherited syphilis. Schnable asserts that there is a retinal irritation present in almost all cases of iritis. My own experience would lead me to hesitate to support this view, especially in the less severe cases. The corneal haziness due to an accompanying keratitis or other obstructions from adhesions and even an occluded pupil; any or all of which may be encountered in a severe case of syphilitic iritis, often makes it impossible to satisfactorily examine the retina in the cases in which the symptom would be most likely to occur. My experience with acute syphilitic independent retinal lesions, or those that have seemed to be independent, has led me to look upon their resolution with a considerable degree of optimism, provided they have been taken in hand before true tissue change has begun. While the retina receives its blood supply through the central retinal artery and the central retinal vein carries it away, it must be borne in mind that there are sometimes found cilio-retinal arteries and veins which might have a decided influence in preserving parts of the retina cut off from blood supply through the central vessels. This also might have an important bearing upon the distribution of pathological influences.

Optic Nerve: Among the many ways syphilis may exert a deleterious influence upon the optic nerve is by pressure at any point along the course of the nerve, in the brain or after it leaves it. This pressure may be owing to syphilitic tumors of the brain or to other manifestations of brain syphilis, or to tumors in the orbit of syphilitic origin, either in the soft parts in the orbit or in the bony structures. Malformations of the orbital bones may cause a lack of proper relation between the optic foramen and the optic nerve and thus cause pressure upon the developing nerve, and this malformation may be one result of syphilis. Ocular symptoms, and whether one or both eyes are affected, greatly help to locate the tumor or other cause of disturbance. As the result of syphilis we find papillitis or "choke disc," ascending neuritis, descending neuritis and spinal neuritis, the latter accompanying locomotor ataxia at times. My examinations of the insane during the past fifteen years, through my connection with the Brooklyn State Hospital for the Insane at Brooklyn, N. Y., have given me the opportunity to fully support the generally expressed opinion that a large number of paretics are subject to optic nerve lesions. A descending optic neuritis ending in optic atrophy seems to be the most frequently encountered form. There seems to be, occasionally, simple atrophy of the optic nerve without previous inflammation; at least without visible signs of inflammation. The prognosis in syphilitic progressive atrophy of the optic nerve is always grave. Blindness is very likely to result in from a few months to two years, although a few fibres may escape and the patient retain a little vision. A premonitory sign of optic nerve atrophy, and one of distinct importance, is the loss of iris reflex resulting, in a more or less complete degree, in what is known as the "Argyll-Robertson pupil." This may occur in the early part of the trouble and should always be watched for in all cases of syphilis, whether giving other ocular symptoms or not. With paresis it is also often an early symptom, and we know how often, if not practically always, paresis is a syphilitic disease. Progressive syphilitic optic nerve atrophy is, practically always, bi-lateral.

Vitreous: As the vitreous receives its nutrition from the ciliary body and the retina many disturbances here may originate in these structures. Brucke has shown that the vitreous body consists of a semi-fluid portion enclosed in the meshes of a transparent framework of delicate septa; rather favorably constituted, it would seem, as a site for the inception and propagation of inflammatory processes and, still, most vitreous inflammatory exhibits are the results of inflammation in the structures in the immediate vicinity. Disturbance of vitreous nutrition may result in vitreous opacities, but the dust-like opacities, and others of larger size, are apt to be due to other disturbances. There may be haemorrhages from diseased vessels leaving blood clots, and all forms of vitreous opacities seem more common among those infected with acquired or hereditary syphilis.

Ocular Muscles: The effect of syphilis upon the ocular muscles extends all the way from partial and temporary interference with the muscles' functions to complete and permanent paralysis. The ocular muscles are dependent for their nerve supply upon the third, fourth, fifth, sixth and seventh cranial nerves. The direct etiologic factor of syphilitic derangement of the ocular muscles is either injury to the muscles, to the origins of the nerves supplying them, or injury to these nerves in the course of their distribution. While there seems to be a lack of perfect agreement among ophthalmologists concerning the frequency with which syphilis is an etiologic factor in ocular muscle derangements the majority seem to agree that the percentage is a large one, some having gone so far as to have stated that syphilis is responsible for half the cases found. Syphilitic lesions in the orbit, and the extension of syphilitic inflammation from the accessory sinuses may be etiologic factors. There can be little doubt that ocular muscle palsies, for which syphilis is responsible, are very many, and it would seem best to regard every case with the gravest suspicion and, in the absence of conclusive proof of innocence, and where the proper tests cannot be made, to include in the treatment anti-syphilitic measures. However, it must be acknowledged that here is one of the instances concerning which one is, perhaps, apt to seek a refuge in syphilis as a matter of routine, and not to accord sufficient consideration to other possible existing influences. Other causes of proven possible importance are toxaemias of various kinds—lead for instance or alcoholic—rheumatism and circulatory disturbances. The long courses of the nerves supplying the ocular muscles, from their origins to their distributions, should always be remembered, as well as the possible influence of syphilitic disease in the parts through which they pass in the brain and orbit. Naturally the extent of the lesion. and the extent of its distribution, will govern the degree of paralysis and the number of muscles involved. Ocular muscle paralyses are seldom encountered until after the first six months of syphilis and are very often a late symptom. C. S. Bull stated that in about three-fourths of the cases the motor-oculi was affected and the sixth nerve in about one-fourth. Paralysis of the fourth cranial nerve is rare. Paralysis of the sphincter of the pupil is not infrequently met with, and Alexander states that seventy-five per cent of these paralyses are due to syphilis, while Utoff states that the percentage is twenty-five. This discrepancy is a rather startling one and shows the need for further investigation along this line. Two recent cases of paralysis of the pupil sphincter coming under my observation seemed to be quite independent of syphilitic origin so far as history or signs were concerned, although tests could be obtained in neither. Both were accepted as "good risks" by one of our conservative insurance companies. Another case coming to me a few months prior to these was. undoubtedly, due to syphilis, as proven by history and test. Some cases of ocular muscle paralyses have been reported as due to inherited syphilis. Paralysis of the third, or oculo-motor nerve. is often attended by most profound symptoms, owing to its extensive distribution although, of course, when one or more filaments of the nerve are affected the derangement is modified to a less or greater degree. Provided the whole nerve is affected the eye cannot be moved upward or downward and cannot be moved inward beyond the median line and is turned outward. There will be ptosis, dilatation of the pupil and absence of accommodation. Paralysis of the sixth cranial nerve results in convergence of the eye due to impairment of the function of the external rectus muscle and it cannot be moved outward. While paralysis of the fourth cranial nerve is not so markedly apparent visual disturbances will be complained of and muscle tests will show lack of proper function in the superior oblique muscle. Paralysis of the seventh cranial nerve may be accompanied by paralysis of the obicularis palpebrarum muscle, the puncta lachrymalia being drawn away from contact with the eye which suffers not only from exposure, owing to the inability of the patient to close the lids, but from lack of proper moisture. Diplopia is, naturally, one of the distressing symptoms of ocular muscle palsies. As is the case with many, if not most, disturbances of function, due to syphilis. the prognosis is generally good, provided—and here is the real important essential and, unfortunately, the one not always intelligently and vigorously carried out—that the causative syphilitic infection be properly combated, and this early in the inception of the muscle trouble. There seems to be a good deal of evidence to support this view, but there is quite as much to support the contention that if these conditions do not succumb to treatment in a short time the prognosis is decidedly bad.

According to medical history syphilis was first reecognized in Europe in 1493. and was supposed to have been introduced from the West Indies. The reported greater early virulence was probably due to the invasion of a new soil, the excitement always caused by the appearance of a new and seemingly important disease, and a lack of understanding concerning its phenomena and the necessary methods to successfully combat them. Within a very few years of its introduction mercury was used in its treatment and has been used, as a specific, ever since. The iodide of potash was not generally used in syphilis until about 1840 and, while not a specific, in the sense that mercury is, it certainly seems of great value in manifestations of the later stages of syphilis.

A few words with regard to the more modern management of syphilis. A. F. Griffiths states that, in his opinion, there may be a low point Wassermann reaction—say from one to five—in a patient presenting no history, or signs, of specific infection, and still there may be no syphilis. The almost universal routine followed in the clinics of the larger European cities, with regard to the treatment of syphilis, is as follows: (1) Recent cases of infection, where the spirochaetae are found in the initial lesion, but no Wassermann is present. Abortive treatment: First day, salvarsan 0.10 intravenously. Second day, Intramuscular injection of 0.50 cc of calomel emulsion, consisting of calomel 1.00 and olive oil 10.00. Sixth or eighth day, calomel emulsion 0.50 cc. Tenth day, salvarsan 0.30 cc. Fourteenth day, calomel emulsion 0.50 cc, for five times at corresponding intervals. Twenty-sixth day, salvarsan 0.30 cc. At the end of the first month five to eight calomel injections at corresponding intervals. This is followed by two more salvarsan injections, making five in all, and five to eight more calomel injections are administered twice weekly, making about a two months' treatment. Two months after the last treatment there must be an absolutely negative Wassermann reaction. Provided the glands are enlarged at the time the treatment is instituted this program must not be resorted to, as hyperplasia of the glandular tissue shows beginning systemic infection.

(2) Cases later in the state of infection, showing glandular enlargement, with spirochaetae in the initial lesion or, later, showing a positive Wassermann reaction. Treatment for a week or ten days with mercurial inunctions at bed times, from 3 to 5 grams, according to the body weight. After the first 7 to 10 inunctions of mercury give 0.20 cc. of salvarsan. Then 6 more inunctions of mercury followed by 0.30 cc. of salvarsan. Then 12 inunctions of mercury followed by 0.30 cc. of salvarsan. Then 12 inunctions of mercury followed by 0.30 of salvarsan. Additionally to the above give, once weekly, 0.50 cc. of the 1 to 10 calomel emulsion.

After the administration of the 3 last salvarsan injections, and the 24 mercurial inunctions a Wasserman test is made. If negative well and good. Another Wassermann is to be made in 3 months, then every 6 months for 3 years. When continuously negative it is deemed that the disease has been cured. Cases of latent syphilis are put through a long course of treatment with inunctions combined with salvarsan or gray oil or both. To those who have had any tertiary symptoms a clear bill of health may be given in five years if, at the end of that time, the spinal fluid, when tested with the Nonne Appeld test, remains perfectly clear, contains no albumen, and is microscopically free from any cellular elements, and the Wassermann reaction is negative.

THE PRACTICAL APPLICATION OF FUNCTIONAL KIDNEY TESTS IN THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF CHRONIC NEPHRITIS.*

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DURING the past few years many procedures have been devised for testing the efficiency of kidney function under varying conditions. Some of these procedures are so complicated that they are not available for general use. Others have proven of uncertain value. A number of tests remain, however, which are quite practicable for clinical purposes and whose value as aids in the diagnosis, prognosis and treatment of lesions of the kidneys has been amply demonstrated.

Some of these methods have been in use for several years on the medical service in the Brooklyn Hospital where we have had the opportunity of studying them, and the results are of sufficient importance to warrant this review of the subject.

Before taking up the tests, a brief review of some physiological facts is desirable.

The business of the kidney is to eliminate from the body water, nitrogenous waste bodies, such as urea, uric acid, creatin, etc., and inorganic salts, principally sodium chlorid.

Two theories have been advanced to account for the way in which the kidney does its work, Ludwig's filtration theory and the vital theory of Bowman. It is probable that neither theory is entirely correct and that the blood passing through the renal artery reaches the glomerular capillaries and there, partly by mechanical filtration and partly by the secretory power of the cells of the capillaries and of Bowman's capsule, water, containing substances in solution, gets through the capillary walls and Bowman's capsule into the tubules. The concentrated blood which remains after this solution has been withdrawn, passes into an afferent vein which again divides into a network of capillaries over the walls of the tubules. Here, certain other substances, urea, uric acid, etc., are removed from the blood by the secretory action of the tubular epithelium. A number of experiments shows that the tubules also have the power to reabsorb water and some of the dissolved substances.

The glomeruli, then, are mainly mechanical filters and pass on to the tubules an alkaline fluid which contains urea, chlorids, phosphates, sulphates and sometimes sugar. The tubules change this alkaline glomerular fluid to acid, add to it by excretion, urea, uric acid, phosphates and sometimes water and, finally, have the power of concentrating this fluid by the reabsorption of water. Cushny showed that not only was there a reabsorption of water, but also a differential reabsorption of certain of the salts, especially sodium chlorid.

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Secretory nerves have not been demonstrated in the kidney. Secretion depends on the rate of blood flow. Below a systolic pressure of 40 mm. urinary secretion ceases. Increased blood pressure increases secretion. The effects of nervous disturbances on urinary flow are through alterations of the local blood supply.

In composition urine consists of water, salts, urea, which contains 87 per cent of total nitrogen, amonia containing 4.3 per cent nitrogen, creatin 3.6 per cent, nitrogen, purins and unknown about 5 per cent nitrogen.

The average urea output is 30 to 40 gms. per day and varies with the food intake. The other nitrogenous bodies are found, independent of the food if it does not contain them when ingested, and are formed from the breaking down of body tissues.

The inorganic salts, chlorids, sulphates and phosphates come from the food and the destruction of body tissues. Sodium chlorid is most abundant, 10 to 15 gms. being the average daily amount excreted.

The pathological physiology of the kidney has been studied extensively by means of experimental nephritis in animals.

The substances used are:

Uranium nitrate, bichlorid of mercury and chromium, which affect the tubules; arsenic and cantharides which affect the glomeruli, and diphtheria toxin which affects both.

All of these forms of experimental nephritis are acute. To produce chronic forms, metals are administered in small repeated doses, principally uranium nitrate.

Edema is due to not only one, but a number of factors. Thus, in hemorrhagic nephritis it may be due to anemia. In chronic interstitial or vascular nephritis it is cardiac. In acute and chronic parenchymatous nephritis it is renal. Its causes are unknown. Water retention, chlorid retention, vascular injury and changes in the blood are important elements in its production.

Increased blood pressure occurs mostly in the glomerular and interstitial forms of nephritis (the vascular types). It may appear within forty-eight hours after acute onset and is due to arterial contraction. It must be functional because of its rapid onset.

Heart hypertrophy results from high tension and will appear within three or four weeks.

Uremia is an intoxication, and, because of its variations, may be due to more than one toxic agent. Its cause is still unknown. The evidence that it is due to retention products is not convincing. The removal of both kidneys is fatal in six days, but there are no symptoms of uremia. The same is true of anuria from mechanical causes. Uremia does not follow when large doses of urea or sodium chlorid are injected into the blood. Nevertheless, it is also certainly true that the greater the nitrogen retention in the blood, the greater the danger of uremia.

The efforts to find a *reliable measure of kidney activity* date back many years.

Many substances have been found in the blood of uremic patients which were believed to be the cause of uremia. Prevost and Dumas,[2] in 1821, found an increased amount of urea in the blood after the kidneys had been removed.

In 1867, Duckworth[3] used potassium iodid as a test for renal function.

The excretion of nitrogen and sodium chlorid was studied by Fleischer[4] in 1881. He showed the variation in ratio between nitrogen intake and output in nephritis with a known diet.

In 1897 Voigt[5] found that the full amount of lactose injected into an animal could be recovered in the urine.

In 1910 Schlayer and Takayasu[6] produced experimentally in animals, various types of nephritis and studied the excretion of potassium iodid, sodium chlorid, lactose and water. The importance of their work warrants a brief review. They found that in tubular nephritis there was a delay in the excretion of potassium iodid and sodium chlorid, and in glomerular nephritis a delay in lactose excretion with a variable water output. Thus, when the vessels were hypersensitive there was polyuria and in a more severe type of injury the vessels were less sensitive than normal, and oliguria resulted.

They gave the name "hyposthenuria" to a thin urine poor in solids, and described two varieties.

Tubular hyposthenuria is a condition in which the diminished amount of solid substances remains constantly low. The specific gravity and the salt excretion cannot be increased by adding salt to the diet because the tubules are injured. Here potassium iodid excretion is delayed and lactose excretion is normal.

In *vascular hyposthenuria* the glomerular vessels are overstimulated and large quantities of water and sodium chlorid are excreted readily, but with the same degree of concentration. Here the glomerular vessels are believed to be hypersensitive. In this form lactose excretion is delayed and potassium iodid is normal.

Thus Schlayer and Takayasu held that delay in the putting out of potassium iodid and salt was an indication of injury to the tubules, while glomerular injury was shown by an inability to put out lactose readily and by changes in the excretion of water. These conclusions, however, have not been entirely accepted by later investigators.

Tests for renal function fall into three general groups, depending on (1) the ability of the kidney to excrete from the circulation abnormal substances, such as dyes or drugs, which are introduced into it; (2) analysis of the products of metabolism retained in the blood as a result of faulty elimination by the kidney; (3) abnormalities in the physical and chemical properties of the urine.

The number of tests that has been used is legion:

Under the first group we have—Phenolsulphonephthalein, methylene blue, indigo-carmin, rosanaline, potassium iodid, lactose, salicylates, sugar following phloridzin, and the enzyme diastase.

Under the second group—Blood urea, total nonprotein nitrogen in blood, cryoscopy or lowered freezing point of blood, cholestrin, creatinin and uric acid.

Under the third group we have—Variations in specific gravity; water, sodium chlorid and nitrogen output and their relation to intake, and, in addition, the usual examination for albumin and casts.

Many of the tests mentioned are of uncertain value and others have been discarded because of difficulties in technique. In our work we have made use of the following general scheme:

The patient is placed upon a standard diet (see sample herewith). A record of fluid intake and output is carefully kept. The specific gravity and output of chlorids and nitrogen in the urine are ascertained. The amount of blood urea or total nonprotein nitrogen in blood is determined and a phthalein test done. Subsequently, a measured amount of salt (10 gms.) is added to the diet and the ability to excrete this added salt is noted.

STANDARD NEPHRITIC DIET.

Grams Proteid	BREAKFAST	*Calories*
	Orange or baked apple or stewed prunes	
5	Oatmeal or farina or Cream of Wheat, 5 oz; milk 2 oz.; sugar 1½ teaspoonsful	150
7	One egg, boiled or poached (no salt added)	50
1½	One slice of toast or bread—butter one-inch cube, 10 gms.	65
	Coffee, 5 oz., with cream, ½ oz.; sugar, one teaspoonful	80
	10:00 a. m.	
8	Milk, 6 oz.; cream, 2 oz.; lactose, one oz.	480
	DINNER	
14	Meat, 2½ oz. (no salt)	135
	Baked potato and butter, one, medium-sized or mashed, 2½ oz. (no salt)	75
1½	Vegetable (no salt) 2½ oz.	40
1½	Pudding (no eggs), corn starch, rice, tapioca, chocolate, or ice cream	140
	Tea, 5 oz.; cream, ½ oz.; sugar, one teaspoonful	80
	3.00 p. m.	
8	Milk, 6 oz.; cream, 2 oz.; lactose, one oz.	480
	SUPPER	
	Baked potato and butter (medium-sized)	75
3½	Milk toast (bread, one slice; milk, 2 oz.)	90
	Salad (lettuce, French dressing, olive oil, no salt)	180
	Cake or fruit or gelatine or jelly	50
50		2170

Total chlorids, about 4 grams.
Total fluids, about 35 ounces.

These tests will bear more detailed description:

Water output: The test of renal response to water may be made by comparing the amount of fluid ingested to the amount eliminated in the same period. Normally, there are wide variations due to atmospheric temperature, sweating, diarrhea, etc., but the amount of urine passed should roughly be equal to the amount of water taken in the diet as fluids, usually 1,000 to 1,500 c. c., per day.

The average normal daily *salt* output is 10 to 15 gms.

Added *sodium chlorid* is eliminated normally in two ways:

First, by drinking more water, the added sodium is eliminated without increasing the percentage of salt in the urine.

Second, the added sodium chlorid is eliminated in a highly concentrated solution without the ingestion of more water. In this case, however, the elimination may be slightly delayed. With diseased tubules, according to Schlayer, the elimination of sodium chlorid is much delayed, even when much water is added. Normally, the 10 gms. or more of added salt should be put out in twenty-four hours. For the determination of sodium chlorid in the urine we have found a modification of the Volhard method convenient.[7]

The *phthalein test* was devised by Geraghty and Rowntree,[8] of Baltimore. Their first paper was published in 1910. Phenolsulphonephthalein is a bright red crystalline powder somewhat soluble in water and alcohol, but readily soluble in the presence of alkalies. For the test 6 milligrams of the powder are used in one c.c. of solution. This amount is injected into the lumbar muscles after the patient has emptied his bladder. He is then instructed to drink two glasses of water. After one hour and ten minutes the first specimen of urine is collected and second and third specimens are collected at one-hour intervals. Enough 25 per cent sodium hydroxid solution is added to each specimen to make the urine decidedly alkaline in order to bring out the maximum reddish color. The specimen is diluted up to 1,000 c.c. with water, shaken up, and a small quantity is filtered and used in the colorimeter to compare with the standard, which is an alkaline solution containing 6 milligrams to the liter. The percentage on the scale is then read. In health the elimination is almost complete in two hours. In the first hour 40 to 60 per cent should appear; 60 to 85 for the two hours.

The advantages of the phthalein solution are:

Its stability, does not decompose in solution; it may be sterilized by boiling; a small amount is needed for the test, 6 mg. in one c.c. of water; its injection into the lumbar muscles is painless; it is excreted entirely by the kidneys and is rapidly found in the urine in three or four minutes after the injection; 50 to 80 per cent is excreted in two hours. The estimation is accurate and easily made with the colorimeter. The quantity of urine passed does not influence the result, nor do pus, bile or phosphates.

Tests for Retained Substances in the Blood

The determination of the non-protein nitrogen and urea in the blood was put upon a practical clinical basis by Folin and Denis[9] in 1912. They developed a technique for separating the total waste nitrogen in the blood by coagulating out the proteid and then converting the non-protein nitrogen into ammonia by boiling with sulphuric acid, carrying the ammonia by means of an air current into a flask containing dilute acid and measuring it either by means of titration or by means of Nesslerizing and comparing it in a colorimeter with a standard solution of ammonia which has also been Nesslerized.

Folin also devised a test for extracting the nitrogen of the blood urea, by means of boiling with potassium acetate, but urea determination are more readily made by the Marshall method.

Marshall[10] makes use of an enzyme called urease, which is obtained from the soy bean and which has the property of splitting urea into ammonium carbonate and water, and at the same time not affecting any proteids or other nitrogenous bodies present in the solution. By setting free the ammonia with caustic soda and driving it with an air current into a tube or flask containing dilute acid, the amount can quickly be determined by titration.

Folin and Denis, working with exceptionally healthy subjects, found the total non-protein nitrogen in the blood to vary from 22 to 26 mg. per 100 c.c. of blood and the urea nitrogen from 11 to 13 mg. per 100 c.c. This is too narrow a standard for patients. For practical purposes we may accept the standard set by Janeway,[11] that the total non-protein nitrogen should not exceed 40 mg. per 100 c.c., nor the urea nitrogen 20 mg. per 100 c.c. of blood.

Before passing on to consider some diagnostic points a few words should be said about the *Mosenthal nephritis test meal.*

Recently Herman Mosenthal,[12] of Baltimore, has given a modification of the Hedinger-and-Schlayer[13] method of estimating renal function. He measures the specific gravity, salt, water and nitrogen output in two-hourly periods during the day, and the total nightly output, when the patient is on a so-called "nephritic test diet." Mosenthal's diet contains measured amounts of food for breakfast, dinner and supper and totals for the day, 13.4 gms. of nitrogen, 8.5 gms. of sodium chlorid and 1760 c.c. of fluid, with a considerable amount of purin in the meat, soup, tea and coffee. The quantities refused by the patient should be noted and allowance must be made in calculating the food intake. No fluid or solid is allowed between meals or at night. In examining the urine the volume of each two-hourly specimen is measured and the specific gravity is determined. The points to be noted are:

(1) The characteristics of the day urine.

(2) The total quantity of salt, water and nitrogen excreted in twenty-four hours.

(3) The characteristics of the night urine.

In response to this diet normally the day urine shows fluctuations in the specific gravity readings, equal balance of salt, nitrogen and fluids.

The night urine shows a comparatively small quantity (about 400 c.c.); the specific gravity is high and the nitrogen per cent is high.

In a diseased kidney, he says, the kidney shows its diminished power to functionate by a fixation of its concentration, while in a normal kidney the specific gravity is high or low, according to the demands made by the fluids and solids ingested. The power to excrete a more dilute urine is lost, as well as the power to concentrate.

In *nephritis* there are two types of abnormal secretion in *day urine:*

(1) Salt retention with normal nitrogen elimination in chronic parenchymatous nephritis.

(2) Diminished salt and nitrogen elimination in primary and secondary contracted kidney.

The night urine in nephritis: Nycturia has long been recognized as a valuable sign in nephritis. Mosenthal found that it is often the earliest sign of nephritis. Besides nycturia, the night urine shows low specific gravity and low nitrogen per cent.

His results, then, in the two chief (?) types of chronic nephritis are: In chronic interstitial—fixed and low specific gravity, diminished salt and nitrogen excretion, polyuria, as determined by twenty-four hour measurement of volume, increased volume at night. In the chronic diffuse or parenchymatous type the findings are more variable. When there is edema, there is salt and water retention, nycturia, or increased volume, at night, and normal nitrogen output. With edema disappearing, water and salt are excreted in about the normal amount, and nycturia is marked.

In renal congestion from myocardial insufficiency we have specific gravity fixed, about 1,020, salt output diminished, normal nitrogen, oliguria and normal night urine.

In considering the *diagnostic value* of the various functional tests it will be noted that there are certain essential differences in the character of the information obtained from each.

The phthalein test, for instance, is a test of present renal function. In other words, it is a measure of the ability of the kidney to excrete this dye from the blood at the immediate time when the test is made.

The tests for retained substances; that is, blood urea and total non-protein nitrogen in the blood, on the other hand, are a measure of the accumulation in the blood of waste products which should be eliminated by the kidneys. Where the blood urea or total non-protein nitrogen is high, it shows that diminished renal function must have been present during a certain period of time while these substances accumulated.

This is of diagnostic importance; for instance, in a case of acute myocardial insufficiency without serious kidney damage, the phthalein excretion, due to passive congestion of the kidneys, may be low, but the urea or total non-protein nitrogen of blood is little, if any, increased above the normal. As the circulation improves the phthalein excretion rapidly rises until, when compensation is completely restored, it reaches the normal.

If, however, in addition to the cardiac insufficiency, there is a complicating chronic nephritis, not only will the phthalein excretion be very low, but the blood urea and total non-protein nitrogen will also show a marked increase, and, if compensation is re-established, the phthalein test, although it may, and usually does, improve somewhat, will never reach normal limits. The non-protein nitrogen remains unchanged. This is well shown in the following cases:

I. *Cardiac Insufficiency without Renal Involvement.*

Male, age 53, admitted to the Brooklyn Hospital suffering with extreme myocardial insufficiency.

Great dyspnea, cyanosis, edema of the extremities and lungs, ascites.

Auricular fibrillation with a pulse deficit of 20 beats per minute.

Urine, scanty, faint trace of albumin, no casts.

Phthalein 52 per cent in 2 hours.

Blood urea 32 mg. per 100 c.c.

The patient improved rapidly with appropriate treatment for cardiac insufficiency, left the hospital and is still under observation in our Cardiac Class.

II. *Cardiac Insufficiency with Renal Involvement.*

Male, age 32, negro, admitted to the Brooklyn Hospital suffering with great dyspnea, spitting of blood, palpitation, edema of the lungs and legs.

Heart enlarged. Signs of mitral regurgitation.

Blood pressure, 210 systolic, 120 diastolic.

Urine, 1010, trace of albumin, few granular casts.

Phthalein 5 per cent in 2 hours.

Blood urea 96 mg. per 100 c.c.

Chlorid output 1 1/4 gms. in 24 hours.

Death with edema of the lungs 6 days after admission.

Post mortem. Heart, sclerosis of mitral and aortic valves.

Hypertrophy of left ventricle. Kidney, passive congestion and advanced interstitial nephritis.

Thus we have a fairly reliable means for determining whether in a given case of cardiac insufficiency there is also serious kidney disease or not.

As an aid to the early diagnosis of nephritis, functional studies are of great value. A diminished phthalein output, a blood urea above normal, an inability to put out added salt or water promptly, may confirm a diagnosis of nephritis when the clinical manifestations are slight and the classical signs of albumin and casts are entirely absent. Mosenthal has laid particular emphasis upon the importance of nocturnal polyuria of low specific gravity, poor in salt and nitrogen, as an early sign of kidney damage.

Uremia, with few exceptions, is regularly accompanied by very low phthalein output, usually only traces in several hours, and by high blood urea and total non-protein nitrogen, sometimes reaching the extreme of 200 or 300 mg. in 100 c.c. of blood. This is of great assistance in differentiating uremia from other forms of coma and convulsions as they never show such extreme values.

III. Uremic Coma.

Female, age 38, admitted to the Brooklyn Hospital in coma.
No history.
Temperature 101 degrees.
No edema.
Chronic valvular disease.
Blood pressure, 140 systolic, 90 diastolic.
Urine, 1004, trace of albumin, few granular casts.
Phthalein, 2 per cent for 2 hours.
Blood urea, 250 gm. per 100 c.c.
Spinal fluid, negative.
Died in 48 hours.
Autopsy: Fatty degeneration of the liver and advanced intersitial nephritis.

Many attempts have been made to correlate the signs of abnormal renal function, as shown by the various tests, with the different types of nephritis found clinically and at autopsy. The work of Schlayer and his assistants is very noteworthy in this respect. But it must be emphasized that the tests are of renal function alone and cannot be made to prove the presence of specific anatomical lesions.

Most of the cases of nephritis which we see are mixed types. Functionally, cases occur with water and salt retention without nitrogen retention. These are cases which fall in the group of parenchymatous nephritis. Where nitrogen retention is present it is practically always associated with disturbances in the salt and water output.

Prognosis.

Experience with functional tests has become sufficiently great so that we may now safely use them in prognosis. Generally speaking, we may say that the more advanced the disease the greater will be the disturbance of function as shown by the various tests. The more widely they deviate from the normal, the graver the prognosis. Repeating tests at intervals makes it possible to follow the progress of the disease. Whether function is returning to normal, remaining stationary or diminishing can be determined. This is particularly true of the phthalein test. The observations and recorded figures of many investigators prove that the degree of renal disease is closely paralleled by the kidney's ability to excrete this dye, thus confirming Rowntree and Geraghty's original communications.

There is one important exception to this rule, namely, the passive congestion of cardiac insufficiency, as before noted. Here, the phthalein output may be very low, but it rapidly increases as the circulation improves.

Repeated phthalein tests showing a progressively lower output indicate a progressive lesion and a bad prognosis.

Very low excretion of phthalein, say, under 20 per cent in two hours, always justifies a grave prognosis, except in those cases of surgical nephritis following mechanical obstruction of the urinary passages. Here, surprising improvement often follows removal of the obstruction.

Uremia is almost always ushered in by a complete suppression of phtahlein excretion or just faint traces in several hours. Impending uremia can frequently be foretold before the onset of any clinical symptoms by this marked absence of the kidney's ability to put out phthalein.

The figures published by Thayer and Snowden[14] are worthy of quotation, as all their cases were confirmed by autopsy. These were all cases of chronic nephritis:
20 per cent or over in 2 hours, 9 tests, 6 cases, longest survival 8 mos.
10 to 20 per cent in 2 hours. 6 tests, 6 cases, longest survival 4 mos.
Under 10 per cent in 2 hours, 16 tests, 12 cases, longest survival 72 days. Trace only, 7 tests, 4 cases, longest survival 5 days.

In the Brooklyn Hospital, on the service of Dr. Dudley D. Roberts, during the year 1915, there were 8 fatal cases of chronic nephritis. Their record is as follows:

I, phthalein 0 in 3 hours; died in 72 hours.
II, phthalein 30% in 2 hours; died in 60 days.
III, phthalein trace in 2 hours; died in 7 days.
IV, phthalein 10% in 2 hours; died in 2 weeks.
V, phthalein 2% in 2 hours; died in 3 days.
VI, phthalein 0 in 3 hours; died in 5 days.
VII, phthalein 3% in 2 hours; died in 2 days.
VIII, phthalein 2% in 2 hours; died in 7 days.

The prognostic value of the tests *for retained urea or non-protein nitrogen* is also great, although it has not been as accurately determined as the phthalein.

Many have shown that in the majority of cases the nitrogen of the blood increases with increasingly severe nephritis so that the degree of accumulation affords valuable information in regard to prognosis.

Frothingham, Fritz, Folin and Denis[15] showed in experimental uranium nephritis in rabbits, the relationship between the extent of the disease, as shown by microscopic section, and the excretion of phthalein and retention of non-protein nitrogen in blood. The two tests paralleled each other, except that the phthalein excretion in the urine dropped rapidly to its lowest point and returned rapidly to normal with recovery of the kidney, whereas the non-protein nitrogen in blood accumulated more gradually and returned to normal more gradually. Hence, in the latter test the duration of the disease is an important factor.

Very high values, say, over 100 mg., are of grave significance and often suggest danger of impending uremia.

Cases in which the blood urea or the non-protein nitrogen increases while the patient is on a low protein diet do badly.

In cases of myocardial insufficiency the presence of high blood nitrogen makes the prognosis much worse as it indicates the presence of serious kidney damage.

Salt and water retention is of less importance in prognosis than the foregoing tests. There is one rather rare type of nephritis, first described by Pepper and Austin[16], characterized by marked edema, in which the retention of salt and water is very pronounced, and in which the other tests may be little, if any, changed from normal. Here, the degree of retention would be an indication of the severity of the disease.

Salt Retention Nephritis.

Male, age 13, admitted to the Brooklyn Hospital suffering from marked edema of the face and extremities, ascites, many moist rales in lungs.

Urine, 1013, heavy trace of albumin, hyaline and granular casts.

Second day in hospital, *phthalein 57 per cent* in 2 hours.

Blood urea, 38 mg. per 100 c.c.

Chlorid output, .8 gm. in 32 oz. urine.

Sixth day, chlorid output, 2.7 gm. in 36 oz. urine. *Intake,* 20 oz. of fluid. *Diet:* Jelly, baked potato, salt-free cereal, milk, cream, lactose.

Tenth day, chlorid output, 2.8 gm.

Seventeenth day, chlorid output, 5:6 gm. in 39 oz. urine, specific gravity, 1018.

Twenty-fourth day, chlorid output, 9.7 gm.

Edema gone. Patient discharged from hospital.

Diagnosis: Subacute parenchymatous nephritis.

Treatment.

To a certain extent at least, the functional tests offer a more accurate and rational basis for treatment than can be obtained by the usual clinical observations alone.

Salt and water retention indicates a diet poor in salt and water, as was first taught by Widal. The value of this procedure is well recognized (see preceding case).

The treatment of nitrogen retention is by no means so satisfactory, although marked retention calls for a low proteid diet, 20 to 30 grams per day. But it has been shown by Chittenden and others that the body requires from 40 to 50 grams of proteid daily to make up for the tissue waste. If less than this amount is given for long periods, gradual starvation will result. Frothingham and Smillie[17] have shown that the administration of a low protein diet usually reduces the non-protein nitrogen in the blood of cases with retention and will frequently keep it down to normal.

Foster[18] recently reported some studies of cases where the nitrogen balance was influenced favorably by the administration of large quantities of water. These were cases where the power of the kidney to excrete water was unimpaired. This is in accord with clinical experience. Care must be observed so as not to produce edema.

Finally, the effect of the treatment may be observed by means of repeated tests.

In conclusion, it should be emphasized that functional tests are not a substitute for clinical observations. Nevertheless, they are of very great value in the diagnosis, prognosis and treatment of nephritis and amply justify a more general use.

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THE PATIENT AND THE PHYSICIAN: DOES THE HEALTH DEPARTMENT TRESPASS ON THEIR INDIVIDUAL RIGHTS?*

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MY subject is a question and the answer is: "Yes." But finding the answer only scratches the surface of the subject. This is a period when "state rights" are giving way to National rights for the strengthening of the Nation and when the interests of the individual are being subordinated to the interests of the community. The fact that this is so does not make it right. On the other hand if this community spirit, this tendency to syndicalism, this placing of social rights above individual rights, of "human rights above property rights," has any essence of virtue in it, then the mere fact of trespass on the rights of patient or physician may be of but small import, provided such trespass does not affront some fundamental law of the land or violate some sacred principle of democracy.

The powers of the Health Department are "police powers," and they are in large measure elastic and autocratic. This Department polices the health of the community as does the uniformed police department its civic probity. In general the physician and the laity are in tune with this arrangement; applied to them specifically, they are oft times out of tune with it. The serologist who believes the Health Department should attack the venereal peril, resents the effect of public Wassermanns on his private income, frequently the parent who subscribes in the abstract to the inspection of school children, rejects it in the concrete when applied to his own child. The physician who has a wealthy obstetric clientele looks with equanimity upon the Department's recent extension of supervision of the new born, while the physician of the poorer districts looks upon it as another organized assault upon his income.

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* Read before the Medical Society of the County of Kings, Feb. 1916.

Even the most ardent champions of the Health Department—and I am not one of them—do not claim for it perfection. Some of its defects, admittedly, lie within the machinery of the Department itself. Other weaknesses, beyond question, have their source outside the department, in those parts of the city government whence must spring the financial and certain other motive powers necessary to a well ordered and effective administration of the health laws.

It is a just cause for resentment on the part of our Milk Commission that new edicts by the Health Department should come first to the Commission's notice from the milk dealers and dairymen the Commission is supposed to supervise. I say is just cause for resentment, unless the responsibility for lack of cooperation lies with the Commission itself, as does not appear to be the case.

In the past the Health Department, or at least many of its officials, have been notorious for their overbearing arrogance in their attitude toward the practitioner. Many of us are eager to believe that those old days have passed away. But today, however willing the spirit may be, there is still a deplorable lack of cooperation between the Department and the profession.

I hasten to say I come tonight to cast no javelin at the head of the Health Department. It would be like bringing coals to Newcastle.

Perhaps it would be more profitable to turn our eyes inward and search our own professional consciences. Whenever we ask: "How far does the Health Department trespass on our rights?" we should also ask: "How far are we prone to trespass on the rights of the Health Department?" and then exclaim "Let him who is without sin cast the first stone!" For my part, I "pass."

I had the honor last year, in conjunction with Dr. Bartley, to represent this Society in an investigation of the Department's laboratories. On this joint committee were Dr. Sondern and Dr. J. Bentley Squire, representing the Medical Society of the County of New York. The Committee submitted the following report:

October 11, 1915.

Dr. S. S. Goldwater,
Commissioner of Health,
New York City.

Dear Sir—As requested by you, the President of the Medical Society of the County of Kings and the President of the Medical Society of the County of New York appointed the undersigned as a Committee to investigate the Diagnosis Laboratory of the Department of Health, and its service.

The officials of that Department extended every courtesy, and as the result of our inspections and conferences, we beg leave to submit the following report:

Efficiency.

"The collection of specimens, the routine of their examination and the promptness of reporting the results, are as satisfactory as the equipment and the size of the staff will allow.

"All possible criticism concerning the distribution of containers and supplies, the routes and manner of collection of specimens, the methods of examination and report, must be based on the insufficient staff and not on any inefficiency of the present staff.

Criticisms.

"Containers and supplies in sufficient amount are sometimes lacking at the different stations.

"Specimens are not collected from stations after 4 p. m., most often a disadvantage in diphtheria cultures.

"Transportation facilities for supplies and specimens to and from the Department are slow, and often burdensome to the persons who have to carry these large packages by hand.

"It might be possible to secure greater refinement in one or other of the routine methods of examination employed.

Suggestions.

"To overcome the lack of sufficient containers and supplies at stations, and to establish any refinements in the methods of examination, additions to the present staff would be absolutely necessary, as the present force is unable to prepare these necessities in sufficient amount or to elaborate on the routine methods of examination.

"Incubators operated in certain Borough stations for diphtheria cultures, and a collection of specimens made at a later hour than now customary, would result in a decided improvement of the service.

"The operation of several small automobiles would allow a decrease in the collecting force, would relieve the burdensome carrying by hand of unduly large packages of supplies, would expedite the distribution of containers and the collection of specimens, and thus could be made to result in the more prompt reporting of results, with undoubted benefit to patient and physician.

"It seems unfortunate that the second largest city in the world should not have as magnificent a Diagnostic Laboratory as some much smaller municipalities both here and in Europe, but the Committee is impressed with the technical excellence of the work done under the existing circumstances, and desires to commend the efforts of the officials directing the same."

Respectfully submitted,
ELIAS H. BARTLEY,
THURSTON H. DEXTER,
For the Medical Society of County of Kings.
F. E. SONDERN,
J. BENTLEY SQUIRE,
For the Medical Society of County of New York.

What makes this report pertinent to the present discussion is that the several defects noted therein were all due to the totally inadequate appropriation allotted to the Department for carrying on its work. And this is one of the points I had in mind when I spoke of lack of cooperation between the Department and the profession.

Here is a matter in which the Health Department's hands are tied through lack of funds. Here is something in which possibly the individual physician could aid; in which certainly the County Societies could assist, to cut the financial knot that hampers efficiency. Have we not failed in this matter of cooperation with the Department and of service to the community?

I understand there are but two compulsory laws in reference to children; that requiring vaccination, and that requiring attendance at school (after the seventh year). But as citizens and physicians we should be willing to subscribe to much more than what is compulsory, if it serve the interest of the community of which we are a part.

The day of at least a moderate governmental paternalism is at hand in this country and the profession must either march abreast of it or ruminate amid the ruins of a past, the picturesqueness of which cannot today be transmuted to efficiency. Child labor law, old age pensions, and workmens' insurance that ring so new in our ears are the consummation of yesterday in the older countries of Europe. No longer can the doctor divide his private work into that for which he receives pay here and that for which he will receive his reward in heaven. His charity must be that which he puts in taxes to support these laws of social and economic justice, and that part that is taken from his income by the work that organized and official departments are doing to conserve the health of the Nation.

All the safeguards against arrogant and meddlesome interference we and our patients are entitled to, and should be pledged to defend in an organized and effective way. We have a right to expect that every cooperative effort of ours shall be met in a cooperative spirit by the public officials that we have designated to carry on a great work. We must feel that it is a part of *our* work, and they must be *made* to feel that it is.

But before we enquire into the faults of others we must search out our own faults. Before we attack quackery elsewhere we must drive the money changers out of our own temple.

Before we turn renovating eyes on the Health Department we must clean our own augean stables, or the rank and file of the medical profession and the community at large will look with supercilious disdain on our efforts. It is much easier to tell other folk what to do than it is to be consistent. In the past the every day practitioner has laughed at the endeavor of a County Society to raise by subscription a fund to prosecute illegal practitioners at the same time that the Society was sending such a practitioner as a delegate to state conventions and its elect were associating in consultations with him. The rank and file look askance at any effort to discipline more or less obscure members for advertising while the front pages of our local papers flaunt the copy of those who sit in the seats of the mighty.

Many who do not especially care whether a doctor advertise or not are vitally interested that justice shall have a shrine in this temple. And if this be treason, make the most of it!

THE PHYSICIAN IN POLITICS.*

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THE word politics has been defined as "the branch of civics that treats of the principles of civil government and the conduct of state affairs; the administration of public affairs in the interest of the peace, prosperity, and safety of state; statecraft; political science; in a wide sense embracing the science of government and civil policy."

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* Read before the American Medico-Pharmaceutical League at the Hotel Astor, May 22, 1916.

Politics have been defined in another sense as "political affairs in a party sense; the administration of public affairs or the conduct of political matters so as to carry elections and secure public offices; party intrigues; political wire pulling; trickery."

Politics have also been defined in another sense "as a man's political sentiments, party preference or connection"; as the saying is usually used, "there is no doubt about his politics."

One may see by these definitions that physicians have a place in politics, in fact, we may say that history tells us that physicians have entered all phases particularly the first phase of the subject as herein defined.

In looking over the great names in medicine we have any number of scientists and discoverers in medicine who have been in intimate relation to the politics of their respective countries. Morgagni, the father of pathology may be mentioned, likewise Virchow, the father of cellular pathology. Auenbrugger, an Austrian, born in Tyrol, was a personal friend of the great empress, Maria Theresa. Galvani refused to take the oath of allegience to the new government when the French government revolution disturbed political conditions in Northern Italy. His delicacy of conscience caused him to be respected and admired by all his friends. He said he was bound to the old government and was for this reason considered a Quixote. Galvani first demonstrated animal electricity.

Laennec, born in Brittany, figured in many political incidents during the French Revolution.

Sir Dominic Corrigan was for a time a member of Parliament. Louis of France, who discovered the difference between typhoid and typhus fever was his contemporary. Both entered politics in their respective countries.

In German medicine we have the following great men in medicine who entered into German politics: Johann Muller, Helmholtz, Theodore Schwann, Reifhert, Claparde, Brucke, Remak, and Lieberkuhn.

Going back to the revolution in America we are impressed with the names of physicians in politics. Five physicians signed the Declaration of Independence. These five were: Benjamin Rush, M.D., LL.D., born near Philadelphia, 1746; Matthew Thornton, M.D., born in Ireland, 1714; Josiah Bartlett, M.D., born in New Hampshire, 1729; Lyman Hall, M.D., born in Connecticut, 1725, and Oliver Walcott, M.D., born in East Windsor, Conn., 1726.

Dr. David Ramsey was born in Lancaster County, Pa., 1749. Entered Princeton at the age of thirteen. He began his practice at Charlestown, S. C., and on July 4, 1778, delivered the first 4th of July oration in the United States. While a member of the Continental Congress, owing to the indisposition of John Hancock, he was made President pro tem.

Dr. Hugh Williamson was born in West Nottingham, Pa., 1735, and, receiving his medical degree in Edinburgh, settled in North Carolina.

He was not only a surgeon in the army but became a member of Congress and signer of the Federal Constitution, and a member of the committee to revise the Constitution of the United States. Besides this he was well known as a scientist and astronomer. He died in New York City in 1819.

Going back in history to the time when King George ruled the thirteen American Colonies, we may mention the name of Dr. Jos. Warren, who was killed in the battle of Bunker Hill. He it was who sent Paul Revere upon that world famous ride through Arlington, Concord, and Lexington; he who arranged the lantern signals in the old North Church Tower.

Up in the little town of Amherst, Nova Scotia, Dr. Charles Tupper practiced medicine for many years. The good people of Cumberland County sent Dr. Tupper to the local assembly thinking it would not interfere with his practice. Once in politics, Dr. Tupper went up and up until he reached the post of Premier.

Up in the Granite State young Jake Gallinger studied medicine and became a country practitioner before the Civil War. After the Civil War he was sent to the Legislature. Politics interested him so much that he took in his shingle, preferring to make medicine laws rather than pills. He became Surgeon General of the State, Chairman of the State Committee, Representative to Congress, and United States Senator.

No account of the physician in politics would be complete without the names of Colonel William C. Gorgas and Major General Leonard Wood.

Of all the physicians who have given up their profession for some other, that of letters has been the favorite exchange, and politics has ranked second. Doubtless it is the training of physicians and his close contact with all phases of life, and all shades of human nature through the gamut of emotions, that enables him to succeed so well as an author. Almost every doctor-author has the ability of writing description that is unusually effective and convincing.

The physician in politics at the present time does not cut a conspicuous figure. In small towns and villages we often hear of the physician in the town being elected mayor or justice of the peace. But this condition of affairs does not obtain in our large cities. It is difficult to understand how a physician could continue to practice medicine after he is once launched into politics. It seems as if he must sacrifice his practice from the start. Yet it is absolutely necessary for physicians to keep in touch with politics. Federal medical laws are constantly being enacted, state medical laws are being enacted upon which no physician has a voice in the matter. All these laws affect the community as a whole and the physician in particular. Legislators at Albany say that medical bills come before them for consideration constantly, and they are at a loss to know what to do with them, for without a physician's voice in the matter they do not understand their intent. Many of these laws are aimed directly at the physician, as for example, a lay board or commission being given the power to revoke the license of any practitioner on the mere pretext that he may use intoxicating liquor, or in the judgment of the commission his moral character may not be up to the average. Although I have mentioned many physicians in history who have gone into politics I believe we may safely say that physicians do not go into politics as frequently as they should. The trouble has been, and the same condition holds today, that the best men in our profession do not enter politics. Not only this but our best men in medicine pay very little attention to politics. This is not as it should be, by any manner of means. But what does politics hold out for the physician? A great deal when we look at politics from the standpoint of our first definition.

A physician of good standing can hardly afford to go into politics without high ideals. If he enter politics in a party sense; the administration of public affairs or the conduct of political matters so as to carry elections and secure office or take part in party intrigues or political wire pulling or trickery; his reputation suffers and he drops a peg in the estimation of all, even his best friends, many of whom he may count as his patients. If a man does not grow after entering politics it would have been better if he had never entered public life. President Wilson has very recently said that a man either grows or swells after he enters public life. The physicians who go into public life lacking the high ideals referred to, will surely swell but there will be no growth and all hands suffer in consequence.

In another sense as referred to, all physicians should have political sentiments, party preferences or connections and as the saying goes "there is no doubt about his politics." He should lend his support to principles and not men, and like Emerson should "hitch his wagon to a star."

All physicians should become students of proposed health insurance bills, as the future of the medical profession depends upon the enactment of these bills.

A physician's experience in politics will not make him a better physician. One can hardly conceive of the mental attitude of a successful physician with high ideals seeking office by intrigue and trickery. The office should seek the physician and he should give the subject very careful attention and consideration with deliberation, before accepting a nomination, for as a rule once a man is launched into politics it is difficult for him to break away. I do not believe a physician should aspire to be a district captain or ward leader, an alderman, an assemblyman, a state senator, a congressman or even a coroner or health commissioner, linked as the two are with medicine, for the reason that he will be forced to divorce himself from the practice of his profession while holding these temporary offices.

It is very probable that physicians will never become statesmen in the sense that the members of the legal profession demonstrate, not because physicians lack integrity, or in certain instances ability, but because the life of a physician and the life of a statesman are so diametrically opposite.

A lawyer would in all probability become a better lawyer by his experience as a statesman but this would not necessarily obtain in the instance of a physician who in all probability would become a poorer physician after becoming a statesman. In other words medicine and politics do not mix, except in the strict ethical sense where a physician is interested and plays his part in all civic movements in the interest of peace, prosperity and safety of state. He should be interested in the health and welfare of the people at large and the community as a whole.

To our young medical men one may venture these few words of advice: Keep out of politics unless the office seek you. To the older, more experienced practitioners of medicine, no advice in these matters seems necessary.

SURGICAL CLINICS AND CLINICAL REPORTS IN HONOR OF DR. LEWIS STEPHEN PILCHER.

(*Continued*)

THE DIAGNOSIS OF FRACTURE OF THE NECK OF THE FEMUR.

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THE following remarks apply to the diagnosis of fracture of the narrow part of the neck of the femur, or intra capsular fracture. In the large majority of patients with suspected fracture of the femoral neck the diagnosis is not difficult; in a few cases one may feel uncertain whether a fracture exists or not, without the evidence furnished by a satisfactory skiagraph. On the other hand, before the use of the x-ray, cases have been reported as fractures when a post mortem has failed to show the fracture; and even experts may differ in the interpretation of a clear skiagraph, as to whether a fracture exists or not. And inasmuch as the x-ray apparatus cannot be used in a large percentage of cases, for various reasons, one is obliged to fall back on the long list of symptoms that are, singly, uncertain, but taken in their totality, render mistakes in diagnosis very exceptional.

Considering then the symptom on which we base a diagnosis of fracture of the neck of the femur, the most positive evidence for or against the existence of a fracture is furnished by a good skiagraph, when it can be obtained.

Next to a skiagraph I have depended on a symptom or sign which is as evident to the eye as Allis's sign is to the touch.

Place one end of a tape measure over the anterior superior spine of the ilium under firm pressure of the finger or thumb; have an assistant draw, by traction on the foot, the limb downward to its utmost length without inflicting pain; place the taut tape where it comes opposite to the inner malleolus over that bony point under firm pressure with the thumb of the other hand, and then, being careful that the knee of the patient is kept rigid, have the assistant shove the unbent limb forcibly but slowly up toward the pelvis, and if there is relaxation of the taut tape visible to the eye, a fracture of the neck of the femur exists. If the same procedure is used on the opposite limb there is no relaxation of the tape. The amount of relaxation that takes place will depend upon the presence or absence of impaction. This sign has nothing to do with mensuration; any flexible and inelastic material can be substituted for a tape measure; even the edge of the sheet covering the patient may be used; it is as useful in a one-legged man as a two-legged man; and probably could be employed where the patient had lost the leg of the affected limb. It can be used in every case of suspected fracture of the femoral neck; and it is not necessary that pressure should be made exactly over the top of the iliac spine or exactly over the edge of the inner malleolus. The two important points to be observed in this procedure are that the examiner should use forcible pressure over the two bony points, and that the patient's knee should be kept rigid. At the same time the assistant should make the utmost justifiable traction downward and pressure upward during the manipulation. I at first thought that the relaxation visible in the tape indicated that the fracture was ununited, and that the sign would be of little or no value when there was impaction; but from the inspection of skiagraphs which seemed to show impaction, and where the relaxation of the tape was evident, I am led to think impaction does not lessen the value of the sign. It is surprising how little approximation (less than a quarter of an inch) of the points of pressure will show a marked sagging of the tape. In differentiating a fracture from a dislocation of the hip joint, I have had no experience in the use of the above sign. I imagine the same relaxation occurs as in a fracture; but the signs of each of these conditions are so different as not to give us trouble in differentiating them. At the bedside the question is almost always whether the patient is suffering from a fracture or not, and not whether he has a fracture or a dislocation.

Taking up the question of the value of mensuration in the diagnosis of this fracture, it is common experience that two surgeons will not only differ in their measurement, but each one may obtain different results in his own measurements, even though he has the patient lying on a table and with the line of the body perfectly straight. The usual reason given for these differences is doubtless valid, that while the inner malleolus is easily made out, the anterior spine is not a spine, and it is difficult or sometimes impossible to be sure that one is pressing over the exact centre of it. More important still is the inequality of the limbs demonstrated by the late Dr. A. T. Bristow in a very careful set of measurements of the femora and humeri (Transactions of the American Surgical Association, Vol. XXVII. Page 429). These measurements confirm the conclusions arrived at by the late Dr. J. S. Wight from measurements in the living subject. These tables prove that an inequality, varying from 1-8 to 1 3-8 inches may exist in the length of the lower extremities, the difference not depending on any previous lesion in the bones or limbs measured. This asymmetry demonstrated to exist in such a large percentage of persons (78 per cent in femoral lengths according to Bristow's figures) makes any conclusions as to shortening in suspected fracture of the neck of the femur, based on measurements from the anterior superior illiac spine, a source of error.

It is interesting, but not important, in this connection, to note the asymmetry that exists in other parts of the body—in the head as shown by comparing the two sides of hatters' patterns that are used in the custom-made silk hats; in tailors' measurements for custom-made clothes; in shoemakers' measurements for custom-made shoes; and sometimes, though rarely, in comparing the two sides of a face or the length of fingers in the two hands.

It is, however, very important, in using the anterior superior spine of the ilium in measuring the comparative length of the lower extremities of a patient to ascertain if there is or is not an asymmetry in the pelvis similar to those mentioned above. It has been taken for granted that in using the anterior spine for measurements of this character that symmetry of the pelvis exists in spite of the fact that deformity of the pelvis is a subject that the obstetrician has been lecturing on for more years than the oldest of us have lived. This deformity is no doubt due in most cases to rachitic or other disease. But the other instances of asymmetry mentioned suggests that there may be a pelvic asymmetry short of actual deformity that would make the anterior superior spine of the ilium an unsafe point from which to measure the comparative length of the lower extremities.

Just here it may be mentioned that it is unsafe, when there is apparent shortening in suspected fracture to draw the limb downward sufficiently to have the malleoli on a line. The downward traction should be accompanied by actual measurement from some fixed point on the anterior spine, otherwise the apparent lengthening of the affected limb may be due to tilting of the pelvis, unless counter extension is used and both limbs drawn down with equal extension. To prove whether there is asymmetry of the normal pelvis, set a normal pelvis thoroughly cleansed of soft parts, on a flat surface, the pelvis resting on the point of the coccyx and the tuberosities of the ischium; lay a ruler across the anterior spines, and in a few cases the distance between the ruler and the surface on which the pelvis rests will differ on the two sides. Lack of ante-mortem knowledge of the history of the patient and a possible inequality of the tuberosities render uncertain any inference as to the asymmetry of the spine.

A better method is furnished by cadavers in the dissecting room. Drive a pin into the top of the middle of the sternum through a tape measure in order to avoid any slipping of the tape, and measure the distance from this point to the anterior superior spines of the ilium (and this can be exactly located in a cadaver); and it will be found that the distance between the two points on the right and left side will differ in many cases. In one body that I measured it amounted to a half inch. Lack of knowledge of ante-mortem injury or disease, in spite of evidence to the contrary in the cadaver, holds here as well as in pelvic measurements. The best and most reliable evidence is furnished at the bedside, in living patients who can testify to any ailment or injury that might render the same measurements as in the cadaver uncertain. The anterior spine is more difficult to locate with exactness in the living person than in the cadaver, and one must be careful in the fixation of the upper end of the tape in the sternal notch, and also be careful to allow for differences produced by respiration. In spite of these causes of uncertainty, I found the measurements in forty patients confirmed the results of the cadaver measurements. In four cases the difference in the measurements was one-half inch (the maximum). It varied from this to equality in length.

There is still a possibility that there may be an asymmetry in the malleoli of which I have no measurements to show whether it does or does not exist. With reference to the method of holding the upper end of the tape between the patient's teeth, it may be said that it implies the teeth to hold the tape, also a sterile tape before use, and a resterilization before employing it in the same way again. If mensuration is employed at all—and it certainly should be—I think with Dr. Bristow, "that the measurement taken from the supra-sternal notch to the plane of the heel, as indicated by a plane surface in apposition therewith, will prove to be a method least open to error. The following precaution, however, must be adopted: The measurement must be made at the same period of respiration. The plane surface in apposition with the heel must be parallel in each case, as a slight inclination in either direction would mean an error in the measurements."

The method employed in Dr. Bristow's bone measurements—a modified shoemaker's rule—would allow one to neglect the respiration as a cause of error. I have preferred, however, to use the "relaxation" sign described above, as it enables one to neglect the respiration, asymmetry, mensuration, and even pelvic deformity in the diagnosis.

Outward rotation of the foot is a well-known and often a striking symptom of fracture usually marked, sometimes excessive and at times absent. In a few cases inward rotation is present and difficult to explain. Limitation of voluntary inward rotation of the outward rotated foot is also of some significance. This outward rotation of the foot gets its importance only as associated with other signs of fracture, for it is well known that it exists with contusion of the hip at times, and even when there is no question of fracture, as in general anaesthesia, in natural sleep, in debilitating disease, especially where the knee is even slightly flexed, and in the cadaver. I once saw it in an old lady suffering from senile dementia who fell out of a low bed; the outward rotation was marked with no other signs of fracture except difficulty in standing for a few days. The rotation disappeared promptly, and after a few weeks the patient fell out of the other side of the bed producing a less marked outward rotation than on the other foot and with some lameness and with the same prompt recovery as before.

The inability to lift the extended leg from the bed is a very marked symptom in almost all cases; and some authorities have gone so far as to advise, even when other symptoms were absent, that such a patient should be treated as a case of fracture. I have seen certainly six cases where this symptom alone was present and a clear skiagraph has negatived the possibility of a fracture. One case recently was an elderly female who fell on her left hip and who presented this symptom of fracture alone. The skiagraph showed no fracture. At the same time the patient sitting on the edge of the bed had good though not quite normal power in extending the leg on the thigh and flexing the thigh on the abdomen. Another case with this symptom, beside outward rotation of the foot, shortening and the ability to have the limb lengthened by traction, and a positive skiagraph, after six weeks' treatment by Buck's extension, could lift the extended leg while the other symptoms of fracture were as evident as when she entered the hospital. This symptom is present in fracture of the patella; and I have seen it in acute synovitis of the knee joint, explained perhaps in this instance by the patient's timidity or fear of inflicting pain in any effort at lifting the limb.

More importance should be attached to Hennequin's symptom than is usually done. The tenseness and swelling in the upper part of Scarpa's space, which is described as Hennequin's symptom, are quite characteristic of a fracture, and should be sought for in all cases. This sign is accompanied by the helpless look of the thigh if the foot is markedly rotated. In a few cases of very thin patients I have been confident that I could feel the deformity produced by the fracture by pressing deeply into the upper part of Scarpa's space, in spite of the increased tension.

The so-called excursion of the trochanter is an unreliable sign at best, especially so if the patient is not under a general anaesthetic.

Excursion of the anterior part of the foot with the patient anaesthetized, when the trochanter is seized between the fingers and thumb and forcibly lifted and depressed vertically, is of more value than the trochanteric excursion. Allis' symptom (relaxation of the fascia lata) has, theoretically, much to commend it, but personally I have not felt sure of its presence unless there were more than the usual amount of shortening. I may make the same statement with regard to use of Nelaton's line and Bryant's triangle, as I have had difficulty in being certain about the exact position of the top of the trochanter. Tenderness on pressure in the upper part of Scarpa's space, tenderness on pressure from behind forward at the suspected seat of fracture and pain complained of when a short stroke is made over the trochanter are signs usually present.

Crepitus, false (or new) point of motion and deformity which are relied upon in diagnosticating fractures of the long bones are largely neglected in the diagnosis of the fracture under consideration, partly from an unreasonable fear of breaking up impaction by manipulating the limb to elicit crepitus and partly on account of the impossibility of recognizing the other two signs.

The age of the patient is to be considered in fracture of the neck of the femur. A large proportion of these fractures occur in elderly persons with sometimes very slight injury; and yet not a few fractures occur in the femoral neck of children although they are not disabled to the same extent as old persons.

Let me in closing add one or two observations that seem not inappropriate in this connection. With the exact knowledge furnished by a clear skiagraph the interne of a hospital, unless he is on his guard, will be tempted to neglect the search for the well established signs and symptoms on which reliance for so many years has been placed in making a diagnosis of fracture of the neck of the femur; and when he has finished his term of service, and gone into practice, and not having the facilities for the taking the skiagraph, he will feel keenly the lack of that aid and realize that he has been lax in the use of other and quite reliable methods of diagnosis. And on the other hand he will feel the unreliability of not a few of these signs that have been depended on in former years. For instance, a malingerer might sue another for causing a fracture of the neck of the femur and assume, as a result of injury, pain, inability to stand or flex the thigh, outward rotation of the foot, inability to lift the extended limb from the bed; and the surgeon might find a shortening of a half inch; and if he could not find a deformity at the seat of fracture or a false or new point of motion and feared to examine for crepitus in the interest of the patient, and did not, or could not, confirm or correct his diagnosis by a skiagraph, the patient would be treated for a fracture that did not exist and a jury might, within reason, render a verdict for damages to which the patient was not entitled.

(*To be continued*)

EDITORIAL

"DON'T WRITE; TELEPHONE."

THE heat and moisture of the dog days brings strongly into relief some of the things which make the practice of medicine more irritating than it should be; for instance, the tendency of patients to ask unreasonable concessions of time and place, the peculiar irritations of the telephone and all of those petty annoyances that one can endure with fortitude in bracing weather but which are so mountainous in proportion just now. No one would think of asking a bricklayer, or a carpenter, to defer the completion of his ordinary job until nine o'clock at night, but it is no unusual experience for the doctor to be asked to see some patient at his office or at the home at that unreasonable hour, simply because the patient has decided to take a ride and doesn't wish her convenience interfered with. No one would think of calling up the department stores at 10:30 p. m. to ask whether it was better to use cotton or silk tape, but the doctor is frequently called to the telephone at that time and asked whether or not it is advisable to take a dose of calomel. No business house would tolerate having the time of its employees taken up by purely social or domestic discussions over the 'phone, but many patients do not hesitate to speak bitterly of the doctor who endeavors to limit his telephone conversation purely to business; and the times that he is called to the 'phone to answer questions that the patient would not put his hat on to cross the street to ask are innumerable. If the telephone has done nothing else it has at least made it possible for the brainless to get somebody else to think for them and its abuses are constantly growing. The writer was once called up at half past nine at night to hear a voice come out of the darkness saying, "Doctor, I wish you would just look at my tongue." And he explained his request by saying that he was calling from a pay station! If that man had had the answer given him that he deserved he would now be patronizing another physician.

There are, of course, two sides to this telephone proposition and the physician profits to the extent of being frequently saved needless effort while some of the advice that is given over the 'phone is paid for; but not all telephone messages can be charged up on the ledger, nor any hard and fast rule laid down as to what constitutes chargeable advice. The efforts of the telephone company to increase their service and their dividends and their constant advice "don't write, telephone," has been an incentive for people to abuse telephone service and to make it extremely burdensome.

A peculiar mental attitude has developed in telephone users whereby they are impatient, exacting and even impudent to a degree that they would not dare to exhibit in a face to face talk; no man would come to your front door and demand that you leave the dinner table for any but the most urgent reason, but the same person who will await your convenience in your reception room will refuse to give his name or deliver a message if told over the 'phone that it is not convenient for the doctor to answer and he shows that he is provoked about it, too. Physicians are in no small measure responsible for the abuse of the telephone, just as they are for the abuse of office hours and unreasonable demands on their time and patience. Everyone knows that it is customary with stores to close at a definite hour, they realize that if their need is great they must either do without, wait until tomorrow or use foresight enough to provide early today, and no one questions the reasonableness of closing the store. But with a physician every trifle is magnified to an emergency and the doctor calmly submits to it and fails to see that unless he bands together with the other fellows and resolutely decides to adopt a uniform course of conduct, he is going to be the eventual sufferer in the increased exactions which are bound to come. It is no exaggeration to say that the telephone is a large factor in the increased irritability of American nerves and that unless more concerted means are taken to aleviate its abuse, its harmful effects will increase. Suggestions for the rational consideration of this very real problem will be welcome in these pages. H. G. W.

THE NATIONAL BOARD OF MEDICAL EXAMINERS.

The announcement of the first examination to be held in October under the auspices of this Board calls attention to the ideal of the late Doctor W. L. Rodman that has at last grown to realization. The following, quoted from the announcement of the Board, gives a clear and concise statement of its purposes and requirements:

"The need of a standard medical examining body for the whole United States and its Territories (tributary thereto) has occasioned the organization of The National Board of Medical Examiners. It is a voluntary board, and the members of which are selected from the Medical Corps of the Army, the Navy, and the Public Health Service, the Federation of State Examining Boards and other representative organizations, and the medical profession of the United States.

"The aim of this Board is to establish a standard of examination and certification of graduates in medicine, through which by the coöperation of the individual Boards of Medical Examiners, the recipients of the certificates of the National Board of Medical Examiners may be recognized for licensure to practice medicine.

"The policy of the Board is to conduct its examinations on a broad scientific basis of such a high yet practicable standard that the holders of its certificates will receive universal recognition.

"The independent action by the Board is furthered by the financial and moral support of the Carnegie Foundation.

REQUIREMENTS.

Requirements for Admission to the Examination.

Satisfactory completion of

(*a*) *High School.* A four-year high school course.
(*b*) *College.* Two years of acceptable college work, including physics, chemistry, biology, and a modern language.

(*c*) *Medical School.* Graduation from a Class "A" medical school. (American Medical Association classification.)
(*d*) *Hospital Training.* One year as interne in an acceptable hospital or laboratory.

"The above requirements apply to graduates of medical schools in 1912 and thereafter. The Board may accept equivalent credentials in the case of graduates previous to 1912.

CERTIFICATION.

"Candidates who have been successful in passing the examination and are approved by the Board, will be granted certificates.

"*This certificate is not a license to practice medicine,* nor does it exempt the holders thereof from complying with the legal requirements of the States in which they desire to practice; but it will be evidence of high attainment in medical knowledge; and will, the Board believes, soon be accepted by State Boards as evidence of qualification for licensure."

The presence on the Board of the Surgeon General of the Army, Navy and Public Health Service with representatives of all the important national medical organizations insures a prestige that will undoubtedly, in time, result in making this the only source of authority to practice medicine, for the evident goal of State Board requirements today is uniformity in the demands made upon candidates for a degree. It is particularly to be desired that the individual States be brought up to the same level in their requirements for a licence to practice, the present inequality being a definite factor in retarding the progress of medical science in certain localities by putting a premium on inefficients who are attracted to the states that demand the least. A definite, centralized standard will also help greatly in breaking down the artificial barriers of sectarian medicine and thus be a powerful incentive to the highest type medical education. The progress of the National Board of Examiners is likely to be slow, but a beginning has been made and the result of this first examination will give some indication of what the future has in store. H. G. W.

DISCORDS.

On the hottest night of summer, when there's not a breath of air, when no fan will lure the coolness of old Zephyr from his lair, and you sit in dripping misery apraying for a breeze, what is that which gently agitates the leaves upon the trees? It's the pianola thumping from the house across the street, while the lamplight shows the player and his madly prancing feet. And deep sympathy is added to the perspiration's woe; not for the cussed player, but the tune he's mangling so. Then you seek another window as far as far may be from the ragtime irritation of the fiend who's made you flee. But the music teacher's practicing her never ending scales and her exercises punctuate the tom cat's hideous wails as they rise in deafening unison from fence and first floor back and your tortured nerves are stretched so taut it seems they must crack. And the phonograph three doors away is playing shrill and thin the Rocky Road to Dublin or that Tipperary thing while your neighbor's baby calls its Ma to find some torturing pin. The

City in the summer's full of music's flats and sharps, full of auto horns and wagon wheels and licenced canine barks; full of shrieking trolley car brakes and the shrill street vendor's cry; so if you're seeking peace on earth just pack your duds and fly. H. G. W.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of the Brooklyn Surgical Society. January 5th, 1916.

The President, ROGER DURHAM, M.D., in the Chair.

Program.

Report of cases:

A. (1) Result after Excision of Metacarpal. Patient. X-Ray.
 (2) Penetrating wound of Liver and Diaphragm. Patient.
 (3) Fracture of Tubercle of the Tibia. X-Ray. Ernest K. Tanner, M.D.
  Case (1) discussed by Dr. J. B. Bogart.
  Case (2) discussed by Dr. J. M. Downey. Discussion closed by Dr. E. K. Tanner.
B. (1) Thyroidectomy.
 (2) Partial Concavoconvex Arthrodesis.
 (3) Excision of the Semilunar Cartilages.
 (4) Final reports of Osteogenesis in Tibial Defect.
  New Instruments. J. Sherman Wight, M.D.
C. (1) Gangrenous Appendix-epiploica.
 (2) Intestinal resection.
 (3) Staphylococcus Aureus Bacteremia. Russell M. Rome, M.D.
  Case (2) discussed by Drs. W. C. Woolsey, J. A. Lee and E. H. Mayne. Discussion closed by Dr. R. M. Rome.
Paper: "Intra-thoracic Suppuration." John E. Jennings, M.D.
  Discussed by Drs. J. B. Bogart, J. P. Warbasse, A. H. Bogart, and E. H. Fiske. Discussion closed by Dr. J. A. Jennings.

Result After Excision of Metacarpal. Patient. Radiograph.

Ernest K. Tanner, M.D.

The first case is presented simply as a matter of interest to conservative surgery. It really should not be presented by me because the operation was done by some one else. The case turned up in the dispensary.

Patient R. T., male, age 24, was admitted to the Brooklyn Hospital Dispensary September 13th, 1915, for a discharging sinus on the back of the right hand. There was a history of swelling without apparent cause about six months previously, for which he was treated at another hospital, and there the fourth metacarpal bone was finally removed, as confirmed by our radiograph. Wassermann showed a three plus.

The point of interest in this case is the almost complete lack of deformity of the hand and the good function which he has in the affected finger without the metacarpal. He still has some discharge on the back of the hand, but he has almost full use of the hand. I think you can see the picture pretty well. It shows entire absence of the metacarpal bone. It was a surprise to us because we did not suspect from any examination we made that the bone was gone. He has full flexion of the hand. It just drags a little bit and in looking at the hand you would hardly suspect that there was anything wrong with it.

DR. J. B. BOGART, in discussion, said: "The doctor did not say whether the Wassermann was made before or after the operation. It was done, I presume, before he came to the Brooklyn Hospital. Probably if it had been done before the operation, the operation would not have been necessary."

Penetrating Wound of Liver and Diaphragm. Patient.

Ernest K. Tanner, M.D.

This case is one of penetrating wounds of the abdomen, puncturing the diaphragm and liver and probably the lung.

Patient C. H., male, 7 years. On August 31st, 1915, when climbing over a picket fence, he slipped and one of the iron pickets penetrated the abdomen below the costal margin, just to the right of the median line. He was brought to the Brooklyn Hospital and admitted to the First Surgical Service. He was in moderate shock.

Operation one hour later under ether anesthesia. The puncture wound was enlarged and the abdomen explored. A ragged laceration about one inch deep, extended directly backward along the upper surface of the liver to a perforation easily admitting two fingers, just to the right of the center of the diaphragm. There was very moderate hemorrhage. The diaphragm was closed with continuous chromic sutures. The laceration in the liver was loosely approximated with three interrupted chromics and drainage inserted, both above and below the liver. The abdomen was closed in layers. The skin was not closed. When suturing the diaphragm the shock increased markedly. An ampoule of pituitrin improved his condition.

Convalescence was very stormy. He had an up and down temperature. The pulse averaged the first week about 150. The second week it was not much lower. I have here the temperature chart for the first three weeks. There is no special interest about it. Aspiration of the chest on the third day for accumulated fluid removed about one pint of very bloody serum. From the fact that there was very little hemorrhage at the time of operation, I take it that the lung was undoubtedly punctured at the time, and was oozing.

Exploratory aspiration on the eleventh day gave 2 drams of dark red fluid, and on the fourteenth day thin pus (streptococcus and staphylococcus). Thoracotomy with novocain removed about 8 ounces of reddish-brown pus. The patient's condition improved after that.

Nutrition was very difficult to maintain for the first three or four weeks. He wanted nothing but water.

The abdominal sinus healed about the fifth week. The patient left the hospital for the Convalescent Home at Sea Cliff on October 21st, with the empyema discharging. He now drains 3 or 4 drams of pus daily.

The points of interest appealing to me are:

1. The rather unusual nature of the wound.
2. The fact of its penetrating two of the serous cavities and very narrowly escaping the third one, the pericardium, and,
3. The fact that the boy has finally very largely recovered.

He evidently fell in the upright position on the picket. It penetrated about 5 or 6 inches into the body. He was not very rugged to begin with. He is discharging a little from the empyema. He is coughing a little bit. He is eating very well now, the parents say, and I hope he is going to pull out.

Dr. J. M. Downey, in opening the discussion, said: "The second case brings up that very interesting point in regard to injuries to the diaphragm. I had one case this winter where a man was stabbed on the left side and the diaphragm and abdomen punctured between the seventh and eighth ribs.

"In a recent article that has been published in regard to the diagnosis of injuries of the diaphragm we find that one of the early symptoms is pain in the shoulder on the side on which the injury occurs. That has been recently brought to our mind by an article published in Philadelphia, I think, by Dr. Richard Dexter, and I want to say that, from the two cases I have seen, I think this is a very important point in regard to injuries to the diaphragm. I would like to ask if the doctor noticed in his case if the boy had any pain in either shoulder, or the neck. The interpretation of these signs may be of considerable importance in differentiating between intrathoracic or intraperitoneal disease.

Dr. Ernest K. Tanner, in closing the discussion, said: "The boy, to our knowledge, did not complain of any pain in either shoulder. Whether he did to the ward nurses I do not know, but he did not speak to us about it. The puncture, by the way, was almost in the center of the diaphragm. That might have had some influence on that."

Fracture of Tubercle of the Tibia. X-Ray.

Ernest K. Tanner, M.D.

Patient A. K., schoolboy, 11 years of age, was admitted to the Brooklyn

Hospital Dispensary August 16th, 1915, with a tender lump on the right tibia, just beneath the patella, as large as an English walnut. It was painful on walking.

The history was that over two months before, he had fallen while roller skating but was not sure whether he had hit the knee or not. He knew of no other possible injury. He had a little difficulty after the fall, but not much, till a few weeks before coming to the dispensary, when the lump began to grow and became more tender and painful. A provisional diagnosis was made of traumatic periostitis with possible sarcoma. The X-Ray showed a comminuted fracture of the tubercle of the tibia and a little of the surrounding superficial bone.

Under treatment with plaster cast and other forms of immobilizing the knee the trouble was entirely cured in about three months, the boy attending school all the time. There is now no pain or tenderness and the lump has nearly disappeared.

The points of interest in this case are:

1. The small amount of early disability.
2. The difficulty in making a diagnosis on the history and findings without the radiograph. Repeated attempts failed to get a more definite history.

A Case of Thyroidectomy.

J. Sherman Wight, B. S., M.D.

L. R., 60 years old, fruit dealer, Italy. Referred to me by Dr. Gardner.

Family History: Father died of general anasarca at 69 years of age. Mother age 75, good health. Two brothers and one sister dead.

Past History: Grippe 22 years ago. Chronic nephritis for the past two years.

History of Present Condition: He noticed swelling on the left side of the neck four years ago which increased steadily until it encroached well on the median line, caused pressure and interfered with swallowing and phonation.

Chief Complaint: Tumor of the neck causing pressure.

Physical Examination: Tumor of the left side of the neck as big as an orange, exophthalmos, tremor with muscular weakness, vertigo, Graefe sign, temperature normal, and rapid pulse.

Blood Examination: 5000 W. B. C., 4800000 R. B. C., 70% Polys., 15% S. Lymps., 8% L. Lymps., 7% Trans., 75% Hb., Wassermann negative. Slight acidosis.

Urine Analysis: Sp. gr. 1028, albumen, epithelial and granular casts.

Decision to Operate: The nephritis modified the decision to operate and remove this growth only so far as the choice of an anaesthetic was concerned so it was decided to use scopolamine morphin anaesthetic.

Preparation for Operation: 7:30 a. m., Morphin gr. 1-4. Scopolamine 1 ampule. 8:30 a. m., Scopolamine 1 ampule. 9 a. m., Scopolamine 1 ampule. 9:30 a. m., morphin gr. 1-6. Scopolamine 1 ampule

Operation 10 a. m. Collar incision. Tumor exposed consisting of a greatly enlarged left lateral lobe and very vascular. The vessels were ligated carefully and the tumor removed without oozing and the space sponged dry. The anaesthesia was complete and he was able to sit up on the table immediately after the operation and tell the class that he had had no pain and only slight inconvenience during the operation. This served to demonstrate that the recurrent laryngeal nerve had not been injured. He left the hospital in about a week recovered. Later his urine cleared up so that he showed no evidence of nephritis and he has remained well ever since.

Case of Partial Concavoconvex Arthrodesis.

S. S. age 29, Italy, barber. Was admitted to the Long Island College Hospital August 10, 1915. His family history was negative.

Past History: Has had hay fever every year, attacks of asthma and bronchitis occasionally.

History of Present Condition: About a month ago he had a chill during an attack of bronchitis followed by pain in the right side of his abdomen. After a few days he had pain in his right knee; this continued for some days with fever and then the knee-joint began to swell. He lost weight progressively.

Chief Complaint: Pain and swelling of right knee.

Physical Examination: Thin and anaemic. Lungs, emphysema and asthma;

enlarged right heart. Right knee swollen and joint contains fluid. A considerable amount of turbid fluid was drawn off and found to be sterile. X-ray plate showed osteo-myelitis foci on the inner side of the upper end of the right tibia and the lower end of the femur.

Blood Examination: 8000 W. B. C., 500000 R. B. C., 80% Polys. 10% S. Lymps. 4% L. Lymps. 6% Trans. Hb. 90%. Urine analysis negative.

Decision to Operate: The removal of the red marrow involved would leave the knee-joint somewhat stiff and so as to prevent limping it was decided to set the leg with a slight angle at the knee. In order to accomplish this, and if possible to regain motion, the following procedure was undertaken:

Operation: An anterior flap was dissected up containing the knee-pan; the lower end of the femur was sawed off so as to preserve its convex extremity. The upper end of the tibia was sawed off so as to preserve its concave extremity. A small margin of safety was left in each bone; the ends were fitted together and the leg placed at an angle of 10 degrees of flexion with the femur. A wire nail was driven upwards and backwards from just below the tibial tubercle through into the lower end of the femur as shown in Plate II. This prevented displacement and the wound was closed. The leg was put in a cast. The nail was removed at the end of three weeks. Plate III shows the final result and demonstrates the concavo-convex surfaces. He now has about 15 degrees of motion in the joint.

A Case of Removal of the Semilunar Cartilages.

A. M., age 42, colored, born in the Barbadoes, a janitor. Was referred to me by Dr. Thomas. His family and previous personal history were negative.

History of Present Condition: About three years ago he crossed the subway tracks and injured his right knee while climbing on the platform. He was in bed six weeks with a swollen knee and after the swelling went down he was able to get about with pain and difficulty.

Chief Complaint: Sharp pain and locking of the knee-joint followed by swelling.

Physical examination showed a loose cartilage in the right knee.

X-ray examination was negative. Wassermann was negative. Urine analysis negative.

Decision to Operate: A complete exposure of the knee-joint gives the best approach to these cartilages. The lateral incisions are satisfactory only after long practice. The longitudinal splitting of the knee pan with the partial transverse incisions above and below, gives a more complete exposure. The U incision carried below the tibial tubercle, splitting off the tubercle and raising it in the anterior flap, gives a complete exposure and the replacement of the tubercle gives firm anchorage of the extensors.

Operation: A "U" incision was carried down to the bone. A drill hole was made through the center of the tubercle to the depth of 2". A saw was placed below the tibial tubercle and the bone was cut backward and upward for a depth of 1"; a chisel was placed in this cut and a wedge shaped piece of bone was pried off including the tubercle with ligament attached. This was raised in the flap and the cartilages were easily removed entire. One was broken and partly separated, the other was displaced. The joint was sponged dry; the flap was replaced so that the wedge of bone fitted with the drill hole in line; a screw was put in the drill hole and the tubercle fastened to the bone as shown in the Plate. The wound was closed, the leg was placed on a posterior splint. The screws were removed in three weeks and he left the hospital. He has no loss of motion of knee-joint.

A Case of Osteogenesis in Tibial Defect.

P. G., 20 years old. Family history negative.

Past History: About 10 years ago I operated on him for extensive osteomyelitis of the left tibia; this bone was so badly involved that a small fragment about 2-½" long was all that was left of the shaft attached to the upper epiphysis and a spur about an inch long attached to the lower epiphysis. The tibia regenerated and I reported the case at that time to the Surgical Society.

The child wore a brace and got along fairly well. August 19, 1915, he came to me again and stated that he had discarded the brace some years ago.

He presented the following condition on examination: The leg was wasted and he was walking on the outer ankle with the foot adducted. The x-ray plates show that the shaft of the bone had filled in joining the epiphysis. That the fibula had grown faster than the new tibia since it was unrestrained by a brace.

The tibia was crooked but firm and well able to support the weight of his body. If the boy had continued to wear a brace he would have restrained the growth of the fibula and prevented the talipes. Now that the bones have their full growth a wedge-shaped piece could be cut out of the ankle and the foot straightened out. He has been advised to have this operation but has not as yet consented.

Gangrenous Appendix-Epiploica.

Russell M. Rome, M.D.

The first case I wish to speak of is that of H. S., admitted to the Kings County Hospital on December 23rd, with a history of having had for two days sharp abdominal pain, sudden in onset. The previous history was not at all important. He was a very stout man. This pain was tender at first, according to his story, and when he was admitted to the hospital he was markedly rigid, particularly on the left side, and there was localized tenderness about two inches internal to the left anterior-superior spine. A diagnosis was made either of left-sided appendicitis or a diverticulitis, but after careful search nothing was found but a gangrenous fat pendant situated in the area of the junction where the colon becomes sigmoid. One was markedly gangrenous and each adjacent appendix on each side was markedly inflamed. The three of them were resected and the patient made an uneventful recovery.

Dr. E. H. Mayne, in discussion, said: "Did the sigmoid show any evidences of diverticulitis?"

Dr. Russell M. Rome, in closing the discussion, said: "We were remarkably surprised at the absence of marked peritoneal reaction in the neighborhood of the appendix. There was no local evidence of anything but a slight peritoneal irritation in the immediate neighborhood, no evidence of any adhesions there and no fluid. It seemed to be purely confined to the appendices. The anastomosis that was done in the gut resection was a lateral anastomosis with the sutures in the ends and each side closed, and the lateral anastomosis was sutured."

Intestinal Resection.

Russell M. Rome, M.D.

The second case is one of intestinal resection.

This patient, a woman, was admitted to the Bushwick Hospital on October 10th, having been sent in by a physician with a history of having been twenty-four hours previously curetted and in the process of curetement a loop of intestine emerged at the cervix. The patient was married, 28 years of age, and had had five children. On opening the abdomen the fundus of the uterus was found to be perforated in four different places. It was a non-pregnant uterus. I could not discover the reason for the curettage. The doctor said he thought it might have the effect of relieving some pelvic pain. In four different areas there was a perforation large enough to admit of blunt scissors. The small gut, the ileum, had been ripped from its mesenteric attachment for about 12 inches, which portion of the intestine was resected and an anastomosis done. Patient recovered.

Staphylococcus Aureus Bacteremia.

Russell M. Rome, M.D.

The third case is one of staphylococcus aureus bacteremia.

The patient was admitted to the Kings County Hospital on December 14th with a temperature of 103.5 with what appeared to be a furuncle on the back of his neck. The muscles of the neck were very stiff. The patient was very ill. We assumed this to be of the carbuncle type and made some criss-cross incisions. The area involved was very small. There was practically no induration about it, merely stiffness of the muscles of the neck. A blood culture showed the staphylococcus aureus. The patient eventually developed a swelling of the right side of the neck and back of the mastoid. This area in the back of the mastoid developed pus and was incised and the aureus bacilius was found and he developed symptoms of a sinus trouble. Dr. Durkee, who did a mastoid, made an incision into the dura and through the sinus over the temporo-sphenoidal area, but found nothing and the patient died about ten days after the operation with a staphylococcus bacteremia.

"Intra-Thoracic Suppuration."

John E. Jennings, M.D.

Dr. J. B. Bogart, in opening the discussion, said: "I will take the liberty if I may, of reading some of the conclusions with which I ended a paper on "Empyaema of the Thorax in Children," written some eighteen years ago, and published in the First Volume of the Methodist-Episcopal Hospital Reports. At that time I had been in charge of the Children's Service of the Methodist Episcopal Hospital for some years and, in reading these conclusions over to-night, I find I can subscribe to most of them now. I will therefore take the liberty of reading them to you. After that I shall have some further comments to make. I might say, however, before doing this, that I have been especially pleased with the paper of the evening and if I had anything to criticise adversely it is that Dr. Jennings was not more emphatic in some of the things he said. Not that he needed to have made more noise, but I think he might have taken some means to bring out some of the facts more forcibly than he did, although we may take it for granted that the members of the Brooklyn Surgical Society know a good deal about empyema. However, I think there is still something to learn and there is one thing in particular which I have learned this evening, of which I shall speak later.

"These are the conclusions which followed my paper eighteen years ago":

Conclusions.

1. "Empyaema is more often met with in childern who are subject to bronchitis."

2. "Males are more frequently affected than females and the left side more commonly than the right."

3. "Empyaema in children generally follows pneumonia, the interval varying from a few days to a few weeks."

4. "In all cases of delayed or interrupted convalescence from penumonia in children empyaema should be suspected."

5. "If not previously relieved by operation, spontaneous evacuation may, in the majority of cases, be anticipated in from two to three months after the onset of pulmonary symptoms."

6. "Spontaneous evacuation, whether external or internal (through a bronchus), rarely results in the cure of the disease."

7. "The usual symptoms of empyaema in children are fever, cough, dyspnoea, anaemia, emaciation and night sweats; the usual physical signs diminished expansion, or bulging, or both, of the affected side, displacement of the cardiac impulse, when the empyaema is left sided, and flatness, with absent, distant, diminished or bronchial voice and respiratory murmur below the level of the fluid."

8. "Because of its insidious development, as well as the diversity of the symptoms and physical signs which characterize its occurrence as a complication or sequel of a great variety of other affections, it is not infrequently overlooked or its manifestations misinterpreted, errors which would generally be avoided by the earlier and more frequent use of the aspirating needle for diagnostic purposes."

9. "By its earlier recognition and the prompt institution of appropriate surgical treatment the duration of the disease may be materially curtailed and the death rate considerably lowered."

10. "As in abscesses in other parts of the body, incision and drainage, under appropriate antiseptic or aseptic precautions, in the majority of cases yield the most satisfactory results."

11. "In ordinary cases, resection of a portion of a single rib, preferably the eighth in the mid-axillary line, should precede incision of the pleura."

12. "Where the collection of fluid is large, a preliminary aspiration should be done twenty-four hours before rib resection."

14. "The condition of the patient frequently contra-indicated the use of a general anaesthetic."

15. "The drainage tube should be large and not too long, and should not be removed until the cavity has been obliterated by the expansion of the lung and the discharge has practically ceased."

16. "Primary irrigation, curettage and multiple rib resection are contra-

indicated in children, but either or all may contribute to the closure or obliteration of a persistent sinus or cavity."

17. "Patients should not be considered cured as long as sinus remains."

18. "In uncomplicated cases the greatest danger to be apprehended after operation is the development of pneumonia in the opposite lung."

19. "The temperature in uncomplicated cases is not high before operation and generally falls and remains normal afterwards. A rise in temperature after operation usually indicates imperfect drainage or the onset of pneumonia" (or suppurative otitis media).

20. "In average cases the drainage tube may generally be removed in from three to four weeks and a cure expected in from one to two months."

21. "In cases in which appropriate surgical treatment follows prompt recognition of the disease, speedy recovery without appreciable deformity and with but slight modification of the physical signs over the affected area may be confidently anticipated, while neglected cases not only present grave immediate dangers, but frequently result in palpable physical defects."

"In general, I would subscribe to what I wrote eighteen years ago.

"I would still emphasize the importance of early diagnosis and I agree with Dr. Jennings as to the value of the x-ray in the diagnosis of empyema. By its use we may sometimes avoid the use of the aspirating needle to the advantage of the patient. In a recent case in my care at the Jewish Hospital, in which a serous fluid was found at the first aspiration, there developed a pneumonthorax and following that a purulent fluid. I think that child died, did it not, Dr. Raphael? (By Dr. Raphael: 'Yes.') The sequence of events in that case points very clearly to the conclusion that the repeated aspirations had something to do with the result.

"Just here I want to say that while empyemas are frequently left in greater or lesser degree in the hands of the house staff I think that that is one of the greatest mistakes we make. It may seem a simple thing to aspirate the chest for diagnostic purposes; but, in my judgment, our mortality would be reduced if the surgeon in chief would make the aspirations rather than the house surgeon, or, as is often the case, one of the junior house surgeons. That would be one of the ways in which I would point out that our mortality could be reduced, and I am sure that every surgeon of experience with this disease will agree with me. The pressure at the present time for internes to do surgical operations of all kinds is resulting in very great harm to patients as well as to the internes who do bad surgery for want of experience.

"I still believe that preliminary aspiration should be done in cases where there is a large collection of fluid where the respiration and circulation are very much embarrassed. I am speaking particularly of children. In some cases we can remove a pint and sometimes a quart of pus on the day of operation or the day before operation and, as a result, we find that the child is improved so that the operation results in less shock.

"Most of these operations would better be done under local anesthesia. I have seen a number of deaths follow anesthesia in operation for empyema. I have seen death follow an anesthetic given to replace a drainage tube. Most of the deaths from anesthesia that I have witnessed have been in connection with empyema. Death generally occurs in the early stage of the operation—sometimes before the operation has been begun. They have occurred with both chloroform and ether.

"I am generally in favor of the rib resection except in very young children. One is more certain to have adequate drainage if the operation is skillfully conducted. I want to emphasize the fact that this is really an important operation and that it should be done by a competent surgeon and not by an unskillful interne.

"Now, as to the condition of the child after operation, the condition of shock is very often greatly affected by the facility and the manner in which the operation is done.

"Then, as to the after-treatment; that should receive the most careful attention. You will recall that Dr. Jennings advised that the dressing should first be changed every four hours. In what proportion of empyemas in your services are the dressings changed every four hours in the first few days? I venture to say very seldom. If you do not do this you are opening the door for secondary infection and that is the cause of many of the deaths occurring after operation for empyaema.

"I agree entirely with Dr. Jennings when he says he thinks that the mortality from this disease can be materially reduced. I would go a step further and say that some of the deaths occurring in my services could have been avoided by more careful after treatment. I have a formula which I sometimes use in order to be emphatic about the need of care in this disease: I say that, 'You cannot trust anybody but yourself and you cannot always trust yourself.'

"I want to impress particularly upon all that you cannot turn these cases over to the house staff. You must give them your personal attention from the first until the last until the drainage tube is out and the sinus is healed.

"I agree with Dr. Jennings in his insistence upon asepsic cleansing of the surface about the tube with alcohol or something else appropriate to avoid reinfection from the discharges which have become dried upon the skin. These patients need careful hygienic attention; abundance of fresh air and careful feeding. If you take it for granted that the child is being properly fed you will sometimes find on investigation that it is getting very little food. Unless some one stands by it it does not eat and may die for lack of nourishment.

"In regard to the removal of the tube; that is a point where perhaps Dr. Jennings and I could agree after a little conversation. We should not remove the tube too soon. I have not very much fear of creating a sinus by leaving the tube in too long, but I am afraid if I take it out too soon that I shall have to reopen the sinus and put the tube back again. I don't care to remove the tube it there is any amount of discharge or if there is a cavity of any considerable size remaining. I sometimes test this by introducing a warm saline solution for the purpose of measuring the size of the cavity. If the cavity holds several ounces you will have to put the tube back again.

"I would strongly advise you not to discharge any case from the hospital or from your own care as long as there is a sinus remaining. After the sinus is closed and there is simply a granulating surface on the outside, you can discharge the case, but, as long as a sinus remains, the case is not cured and almost anything can happen to it.

"With regard to the use of formalin injections; we tried those in a few cases at the Jewish Hospital, but saw no good results from them. We lost one of our cases in which we trusted to that form of treatment. I would not say death was due to the injection of formalin, but rather to the fact that we kept it up too long—had too much faith in it.

"With reference to separation of the lung as advocated by Drs. Lilienthal and Samuel Lloyd: I want to object to that. It produces hemorrhage (I am speaking of children) and may add very materially to the shock of operation and so to its mortality. I do not think that the results compensate for the dangers involved. It opens up new areas for infection. It is better to let adhesions alone. My own experience leads me to believe that it is not a safe procedure and should not be advised.

"I am not in favor of the Wilson tube. I agree with Dr. Jennings that by the use of this tube the skin is macerated. It encourages secondary infection. I have not used vaccines to any extent.

"It may be of interest to tell you that the mortality in my first series of cases to which I gave my personal attention in the Methodist Episcopal Hospital was a little less than 15 per cent. I have very good assistants at the Jewish Hospital and yet in 66 cases in our service in the last two and a half years the mortality has been about 25 per cent. In other words, eighteen years ago I had a mortality of about 15 per cent and now it has gone up to 25 per cent. How do I explain that? Partly by virtue of the fact that the children averaged younger and partly by the fact that the cases were not as carefully taken care of. Some of the work was delegated to the junior members of the house staff. The hospital is a very busy one and the services very acute. We had, I believe, a larger percentage of pneumococcus infections than was reported by Dr. Jennings.

Statistics of Jewish Hospital Cases.

"First year, 7 cases, 4 of which died and 3 recovered. In the second year there were 8 cases, 3 of which died and 5 recovered. Between 2 and 3 years, 15 cases: 4 died, 10 recovered and one was improved. Between 3 and 4 years there were 6 cases, 2 of which died and 4 recovered. Between 4 and 5 years there were 10 cases with no deaths; 9 recovered and one was improved. Between 5 and 6 years there were 3 cases, one of which died and 2 recovered. Between 6 and 10 years there were 5 cases, all of which recovered. Over 10 years there were 12 cases, of which 10 were adults. There were 3 deaths in that series; 9 recovered. In 66 cases the mortality was 25.7 per cent."

Dr. J. P. Warbasse, in discussion, said: "The question of aspiration in these empyema cases is important. I believe it is highly desirable, wherever we can, to avoid converting an empyema into pneumothorax. Of course, in the cases in which there are large masses of plastic lymph it is difficult to accomplish this, but there is a certain number of cases in which the thoracic cavity may remain sealed. During the operation, pus may be removed and air may be excluded, and when it can be accomplished it is important that the surgeon should direct his attention to that problem. An aspirating needle introduced into the thoracic cavity in empyema should be under negative pressure. It should be connected with a syringe or vacuum bottle in which there is negative pressure, so that as soon as the needle enters the pleural cavity, no air enters; but if pus is present, it is withdrawn. If no pus nor fluid is present no air is introduced.

"In certain cases we find an absence of the heavy flocculi of fibrin, and it is possible to perform an operation entirely different from the operations which have been described by the previous speakers. In such cases it is wise to introduce a trocar and follow the trocar by a tube, passing the tube through the cannula, withdrawing the cannula, connecting the tube with a sealed bottle under negative pressure, and not permitting air to enter the pleural cavity. This operation may be successfully carried out, and it is well worth while, for air entering in these cases carries with it, unless it is filtered, the organisms which are apt to complicate the infection, and it is the complication of the infection in empyema which produces most of our trouble. Drainage through a large wound and a loose-fitting tube sooner or later complicates the infection. The primary infection in empyema usually is not a serious thing from the standpoint of sepsis. It is when it is complicated by other bacteria of the streptococcus or staphylococcus group that we find serious septic conditions.

"In the very sick we have a serious problem in empyema. Many of these people cannot be given a general anesthetic. They should not be given a general anesthetic. If they are placed on the sound side, the weight of the mass of pus on the diseased side pressing upon the thoracic organ is sufficient to turn the balance against the patient. All of us have seen serious, if not fatal, results simply from the position of the patient on the table before anything had been done at all. We have seen them become cyanotic; and if a general anesthetic is given, they die. In such cases no anesthetic at all, but preferably a local anesthetic is indicated. For a long time I used a local anesthetic, and my patients had a good deal of pain until I learned to find the intercostal groove in the rib in which the nerve lies. To anesthetize simply the skin and the periosteum on the outer surface of the rib is quite inadequate, and patients in whom that procedure is practiced will have severe pain. The needle should be passed under the lower border of the rib into the groove in which the nerve lies, and the anesthetic fluid injected in the vicinity of the nerve. If that is done we may have a satisfactory anesthetic and rib resection can be done with comfort to the patient.

"As to the advisability of rib resection, I agree with the previous speakers. In most cases, however, if the surgeon is not pressed for time, if it is not an emergency operation better drainage is secured if a rib resection is done. The best situation is the mid-axillary line at the eighth rib. The diaphragm comes up so high at the ninth rib in the axillary line that it is not wise to go lower than the eighth rib. The surgeon who takes out a section of the seventh and eighth ribs fulfills the best indications.

"The question of after-dressings in these cases is important. If the operation has been performed without producing a pneumothorax or even if a pneumothorax has been produced because it was necessary to make a large opening for the removal of plastic lymph, even then it is wise to prevent the further entrance of air into the cavity. Inasmuch as the previous speakers have not laid emphasis upon this feature, I desire to do so. In the early dressings particularly a hermetically-sealed dressing should be applied. It is a simple thing. Whether it has been done immediately at the time of operation or may be introduced subsequently, it should be practiced. It is entirely possible to seal up these wounds so that air cannot enter the pleural cavity. That may be done with zinc oxid ointment, rubber dam, and a rubber tube, passing through a hole in the rubber dam which grasps it closely enough to make it airtight. With the ointment on the skin, the rubber dam adheres closely, the tube passes through the rubber dam tightly and makes a dressing which will seal such a cavity. About the rubber dam should be a square of adhesive plaster strips to seal the edges of the dam and keep it from sliding about. A rubber tube should then connect the drainage tube with a two-mouthed bottle, the tube entering one of the mouths of the bottle and the other mouth of the bottle being connected with a suction syringe. This latter should be a rubber bulb syringe. A rubber bulb is best, for with this the nurse or patient himself may keep up a negative pressure. When the patient gets up he may have this bottle slung about his shoulder. It is convenient and effective and encourages the lung to expand. Unless this is done a condition exists which makes for tardiness of healing. This is something which characterizes most of these cases; there exists an almost complete collapse of the lung, the lung lying in the vertebrocostal angle, and ultimately becoming adherent, and a cavity persisting which requires drainage and which cannot heal because of the physical fact that there is a cavity, irrespective of the presence or absence of infection.

"In the treatment of these persistent cases we may hark back to the lesson taught us by a former member of this society, Dr. George R. Fowler, who was the first surgeon to perform the most effective operation which we have for these persistent sinuses. Previous to his operation the operations of Estlaender and Schede were done, operations which were extremely bloody, associated with a high degree of shock, and followed by deformity. Dr. Fowler found that the lung in these old cases with persistent sinuses was covered by a thick deposit of fibrin and plastic material, sometimes a quarter of an inch thick. He demontrated that if this is removed, the lung will expand itself. De Lorme, the French surgeon, did this operation shortly after Dr. Fowler, and in Europe he was given the credit of devising this operation, but he was preceded by Dr. Fowler in its performance. Those of us who have done this operation have all been interested to note how the lung, although it has been contracted for months previously, expands when it is relieved from the binding of the old fibrous tissue which hampers its expansion. Even if nothing more than a few incisions are made, or a narrow strip of this plastic material is removed, if the patient is allowed to come out of the anesthetic a little, immediately he coughs the lung baloons up from the pressure from within in the effort at coughing.

"About twenty-five years ago I followed up a series of cases of empyema which had been operated on. The patients who had survived, I visited in their homes. I published the result of my findings in the Annals of Surgery, Vol. XVII, 1893. The interesting thing which I found was that in a large proportion of these healed cases, there was a scoliosis. Now that is nothing new in the disease now, but at that period of thoracic surgery, it was a new thing. Some of these children were going about quite crippled. Very many of them were crippled. One shoulder was decidedly higher than the other, and they even walked with a limp because of the pronounced curvature in the spine with the concavity toward the diseased side. That can be prevented to a very large degree, and in the treatment of these cases it should always be anticipated. No surgeon should operate on a case of empyema without warning the parents of the possibility of curvature of the spine. He will protect himself by doing so and the patients also. In the majority of cases this curvature may be prevented or diminished to a decided degree by the early application of the treatments which the orthopedists are in the habit of employing. The treatment which I have found effective is to have the parents hang a sheet or sling from a door, and a couple of times a day put the child laterally in the sling, holding it across the sound side, and then bending the child's body as forcibly as the child will stand it. A couple of times a day has the effect of spreading the ribs on the diseased side and stretching the adhesions. This keeps the tissues elastic, and as the child grows its musculature finally overcomes the defect. I cannot emphasize too strongly the necessity for calling parents' attention to this possibility.

"I have not mentioned an expedient which may be employed with satisfaction to prevent the admission of air. It is the collapsible tube. The drainage tube may be connected with a very thin rubber tube, not the ordinary rubber tubing, but tubing which can be secured from the rubber manufacturers, having a thinness so great that it collapses upon suction and acts as a valve and will not permit air to be aspirated. This works very satisfactorily. If such a tube is connected to the ordinary drainage tube, entering the pleural cavity, it may be conducted into the dressings or into the bottle, and it will be noticed that when the patient inhales, the tube collapses. Still it allows the pus to flow out. Such a tube acts always to reduce the size of the cavity and to produce the negative pressure which is so important in bringing the lung down and preventing the persistence of a cavity.

"The expedient of Robinson of Boston I have never tried. Possibly some of the gentlemen present have. He speaks very highly of it. We have discussed making an opening between the ribs, and excising the ribs, but Robinson trephines a rib, and through the trephine opening screws or passes a tube which fits so tightly that it seals the cavity. Experience, however, has shown that these tubes tend to become loosened; and, I presume, it is for that reason this operation has not found favor.

"In closing I would emphasize the importance of recognizing the tuberculous type of empyema. We are so used to dealing with the pneumonic type that we are prone to take it for granted that most of these cases are of diplococcic origin; but we should not be deceived and treat by mistake the cases of tuberculous empyema the same as we would treat cases of the common type due to the pneumococcus. It is a mistake in all cases to freely open the pleural cavity in tuberculous empyema. As a result of such an operation there follows a persisting sinus, if the patient lives, in the first place; and, in the second place, we may expect ultimately a secondary infection of this enormous tuberculous cavity and a fatal result. In all of the cases of tuberculous empyema which were operated upon and which I reported twenty-five years ago, death followed soon after the operation; and the results are quite as bad now. The surgeon should always be on the lookout for tuberculous empyema, and do no more radical operation than aspirating with a needle under negative pressure, removing the fluid and sealing the opening. If subsequent aspirations are necessary they may be done, but under no circumstances should an opening be made, such as would be preceded by the resection of ribs and the introduction of a large drainage tube, through which he may be quite sure complicating infections will enter. If the empyema has become complicated by other infections entering from within, still the aim should be, make so small an opening and seal it so tightly that it may not become more complicated by still further infection from without."

Dr. E. H. Fiske, in discussion, said: "I agree with Dr. Jennings on this question with but one exception. Statistics as to mortality are of no value unless classified as to ages The mortality in infants is very high. Holt's mortality is first year 73%; second year 58%; third year 16%. The comparative statistics are of value and they prove that the greatest mortality from empyema is in infancy.

"We should appreciate now what we realized a few years ago concerning appendicitis in childhood; namely that early diagnosis and treatment are essential if we are to reduce our mortality in the empyemas of infancy.

"Of 19 private cases of empyema treated during the last two years; two died, one 18 months, one 50 years. Only two of these cases were under three years. In the Kings County Hospital the mortality in infants in 1913 was first year 80%, second year 75%, third year 33%. In examining the histories it was found that those operated upon at a fairly early period recovered; while those neglected died without exception.

"I feel that in the young the successful treatment depends on an early diagnosis and an early treatment. The treatment should be aspiration repeated if pneumonia still exists; followed by incision and syphon drainage.

"The pediatricians admit the difficulty of diagnosing empyema in the young. A dull area in the axillary line may be the only physical sign. They rely upon aspiration for their diagnosis. X-ray is not to be relied upon as positive. I have never seen any ill effects from aspiration, though undoubtedly they do occur. I have seen empyemas rupture into the lung, into the esophagus and extend into the abdomen because aspiration was not done in time. So we feel that aspiration should be used more frequently than it is.

"We have devised a satisfactory position for operation in adults with empyema. With the table in the chair position, sit the patient cross-wise with the feet and legs hanging over the side of the table. The patient in a sitting or reclining position rests the normal side against the raised portion of the table. The diseased side thus presents free from obstruction to the operator and the normal lung is not embarrassed by pressure.

"All are done by us under local anaesthesia; linear anaesthesia if only an incision is necessary, regional anaesthesia if resection is required. If inhalation anaesthesia is used inter-trachial anaesthesia should be employed.

"To repeat; in infants early diagnosis and early treatment are essentials if we wish to reduce the extremely high mortality rate in empyemas.

Dr. John E. Jennings, in closing the discussion, said: "There are only one or two points I want to make in which I think perhaps my position has been mistaken, and that is with regard to aspiration. Aspiration certainly is an exceedingly important and desirable thing, but there are three conditions which may be found in the chest when a needle is thrust into it in suspected empyema, or four. There may be pneumonia. There may not be an empyema there and the needle may be thrust into a pneumothorax at that point. In that case it probably does no harm, although it may carry infection from the lung cavity into the pleura. If the needle is thrust into the cavity without a syringe upon it, an open needle, and the patient breathes with the needle in that position, a partial pneumathorax results at that time, which, with the pressure of pneumonia in the chest, has been, I think, demonstrated experimentally, as being likely to produce the empyema which will be found later. In other words, I think that aspiration as a diagnostic procedure is some times responsible for the condition it finds at a later date.

"As far as the mortality and time of operation are concerned, I would once more call attention to the large series of cases at the Mount Sinai Hospital. In cases operated on under one week from the time the disease was recognized, 47 per cent died; in the second week, 25 per cent; in the third week, 21 per cent. In other words, cases operated upon most promptly, immediately after recognition, have the highest mortality. Early diagnosis is important. Early operation is not too early in cases complicated by pneumonia, as most cases in children are. I think those are the two points which I want to particularly bring out tonight, namely, that aspiration as a diagnostic procedure should be done without the introduction of air, and that operation in early cases is the greatest danger that such cases are subjected to. Certainly nobody thinks that empyema in children, even complicated by pneumonia, if let alone, would have a mortality of 47 per cent. The greatest danger that a child with empyema runs is early operation.

Dr. J. B. Bogart, in discussion, said: "I wanted to tell you what I learned this evening. I agree with Dr. Jennings that it is wise not to operate too early and still I am in favor of operation, and I think that we can all profit by having this brought very closely to our attention."

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RESULTS OF OPERATIONS FOR EXOPHTHALMIC GOITER.*

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BEFORE entering into a consideration of the results obtained in exophthalmic goiter cases from operations performed upon the thyroid gland, it might be of interest to consider some of the theories which have been advanced as to the pathogenesis of the condition.

The so-called secretion theory points out that from the thyroid gland, a specific active secretion, necessary for certain body functions, is given off to the blood. According to some investigators, this secretion is essential for the neutralizing of certain poisons circulating in the body; and they assume that in hyperthyroidism, the thyroid gland gives off a less active secretion than it does normally. Mobius, one of the early workers, believes that in exophthalmic goiter, the secretion is increased and qualitatively altered, though others advocate an increase of the normal secretion only. Advocates of the secretion theory have endeavored to prove its soundness in several ways; they say that the opposition in the picture of hyperthroidism and the picture of myxoedema speaks in its favor. Several investigators have shown by diverting the secretion of the gland from the circulation, that the thyroid in exophthalmic goiter furnishes more secretion than a normal thyroid or a case of ordinary goiter. The good results obtained by surgical treatment, speak in favor of the secretion theory. The fact that the symptoms of hyperthyroidism are aggravated when thyroid is administered in these cases, and that artificial hyperthyroidism can be produced by administering thyroid, seems to substantiate the secretion theory.

A number of observers (Filchne, Drurdorfi, Brinfail) have shown that tachycardia, exophthalmos, and hyperaemia of the thyroid gland occurs in animals after the trans-section of the corpora restiformia. This attracted many to the bulbar theory which attributes all of the symptoms in exophthalmic goiter to alterations in the brain. The advocates of this theory called attention to the fact that glycosuria is often present, and that frequently there are alterations of the voice and paresis of the various cranial nerves.

Investigators and experimentors do not agree on the results that have been attained by feeding thyroid to animals. Some say that it will not produce hyperthyroidism in these animals, while others contend that they can produce practically the entire symptom-complex by feeding normal thyroid or thyroid from cases which have hyperthyroidism. As far as we are able to learn, artificial hyperthyroidism never reaches the degree of true hyperthyroidism. Nearly all of the symptoms may be produced, but never to the same degree. Blackford in our Clinic has reproduced practically all of the symptoms in animals by giving them the blood from exophthalmic goiter cases. He has not seen the characteristic eye changes in any of the animals. Kendall, also working in our Clinic, has produced the same symptoms in animals by the administration of certain compounds of iodine which he has derived from the thyroid glands removed from exophthalmic cases. The animals used in these experiments did show eye changes though it has not been definitely proven that they are the same as are seen in typical hyperthyroidism. Falta says, "The greater intensity of the symptoms in this disease, admits of the probability that hyperthyroidism is only a partial phenomenon of the alteration of the central nervous system, and the organism of the diseased patient reacts to hyperthyroidism in a different manner than normal. The foundation for this can perhaps be seen in the constitutional alteration, the cause of which lies in the associated involvement and perhaps in a functional increase of the ductless glands. The final cause of all the manifestations can well be regarded as lying in the central nervous system." No matter which of these theories we accept, we know that the symptoms of hyperthyroidism go hand in hand with the histologic changes in the thyroid gland.

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I do not believe that the symptom-complex of true exophthalmic goiter ever exists without hyperplasia of the thyroid gland. A certain percentage of these cases will be permanently relieved of all of their symptoms by the removal of a part of the hyperplastic gland; another group of patients will be entirely relieved of all of their symptoms the greater part of the time but will be subject to relapses; and a third group will be very much benefited, though never entirely free from symptoms. This would seem to indicate that while the thyroid gland is essentially the seat of the trouble, in all probability there is a close relationship to other organs, possibly the ductless glands and the nervous system, and that in cases not cured by operation, certain elements of the intoxication remain in these organs.

In this review of exophthalmic goiter cases, we have endeavored to determine as nearly as possible the results of operations for the condition. In order that we might study the cases in which a sufficient length of time had elapsed since the operation, we have not included any that were first operated in the past five years; all of the cases here considered, were treated in 1909, which is more than five years ago. The diagnosis of exophthalmic goiter was based upon the clinical history and the histologic changes in the gland tissue wherever a part of the thyroid was removed. In a number of cases, the thyroid vessels were simply ligated and no tissue was removed; we therefore did not have an opportunity to examine the tissue in all cases. In most instances, however, the thyroid was resected. We have only included cases which are in the hyperplastic, toxic group, as described by Plummer and Wilson. In each of the cases where thyroid tissue was removed, there was a definite so-called hyperthrophy, diagnosed by the clinician as exophthalmic goiter and by the pathologist as hyperplastic thyroid gland; we have omitted all cases in which we thought there was any doubt about the diagnosis.

In the year 1909, 176 patients were operated upon for this trouble. Up to the present time, we have been able to trace 121 of the 176 by correspondence and subsequent examinations. A number of these patients have returned several times for examinations, and many of them have reported more than once by letter.

It has been our custom to ligate the superior thyroid vessels in two types of exophthalmic goiter cases. The first class includes the patients who had the disease in a very mild form and we hoped that this procedure might be sufficient to effect a cure. The other class is composed of the very severe cases and one or more ligation was done as a preliminary to resection. We advised these cases to return in three months for the removal of a part of the gland; some of them were so greatly improved by the ligations that they did not return for the thyroidectomy. In our series of 121 cases, 56 were simply ligated, 36 had primary resections of the thyroid; and 20 had primary ligations which were later followed by resections. Nine of these cases were operated on for recurrences; and at the time of this operation, we either ligated one of the vessels or resected a part of the remaining piece of thyroid. We have classified these cases into five groups for the purpose of study. We are well aware of the fact that it is difficult to say when a case of this nature has been cured, and that some of the cases which are apparently cured show late relapses. For this reason we thought it would be best to study cases which had been operated upon more than five years ago. Classification:

In Group I (55 cases), 46 per cent, we include only the patients who have been cured (those who have been well over a considerable period of time and as far as they know, or as far as we can judge, have been completely relieved of all of their former symptoms). The 55 cases which this group embraces, constitute 45.9 per cent of the entire series. We believe that thyroidectomy should nearly always follow the ligations. In our experience, late recurrences are much more common among patients who have simply been ligated; and a number of times we have done thyroidectomies for recurring symptoms where the patients had been well for a number of years following ligation. While a certain percentage of patients consider themselves well after the ligation of the superior thyroid vessels, many of these would be more certain to avoid future difficulties by having a thyroidectomy performed after the acute intoxication has subsided following the ligations.

In cases showing considerable intoxication at the time of examination, it has been our custom to first ligate the left superior thyroid vessels under local anaesthesia. If no reaction at all follows this procedure, at the end of about seven days, it may be safe to remove the right lobe and more of the gland if advisable. If, on the other hand, there is considerable reaction following the ligation of the left superior vessels (as may be shown by an exaggeration of all of the symptoms — increased and more irregular heart action, vomiting, diarrhoea, restlessness), it is best to wait until this reaction subsides and then ligate the right superior vessels. Usually, the reaction following the second ligation will not be so severe. We are of the opinion that after the second ligation, it is advisable to wait about three months before doing a thyroidectomy. A great majority of the cases will continue to improve in every way for about three months. Some do not begin to improve for three months, and others show some evidence of returning symptoms before the end of three months. In a large series of cases, the average gain in weight in three months following the ligation of the superior thyroids, was a little over twenty pounds, several patients gained as much as sixty pounds, and I think one patient gained one hundred pounds. Usually, all of the other symptoms referable to the circulatory and gastro-intestinal systems, will subside very markedly in this length of time, so that by this procedure, the patient is changed from a questionable or serious surgical risk to a very good one. One patient was well for more than five years following the ligation of both superior thyroid vessels; then all of her symptoms of hyperthyroidism gradually returned and she was operated for resection of the gland.

Group II (22 cases), 18 per cent, includes all of the patients who were practically cured of all of their symptoms, though at times they still show slight evidence of the disease. Many of them are entirely well most of the time, though occasionally, especially under severe nerve strains, they show that they are not entirely normal.

Group III (7 cases), 6 per cent, includes patients who reported that they were markedly improved though there was the most of the time some evidence of their old trouble. Most of these patients had entirely regained their weight and physical strength. Patients who still retained a little exophthalmos and nervousness were classed here. Three out of seven in this group had simply been ligated. In all probability if these three and the six in Group II who were simply ligated, would have resections at this time, their few remaining evidences of the disease might entirely disappear.

Group IV (5 cases), 4 per cent, embraces the patients who derived some improvement though it was comparatively slight. One patient had only had a ligation and might receive considerable benefit from a resection at this time. However, as a rule it may be said that great benefit will follow ligation, and that if there is little or no improvement following ligation, we would not expect a cure in case the patient did have a thyroidectomy.

Group V (8 cases), 6 per cent, includes the patients who derived little or no benefit from the operation.

Patients who are benefited but not cured by the removal of a part of the thyroid, will in many instances, derive much good from a resection of the remaining part of the gland. We have demonstrated this point in nine instances where the symptoms recurred and we re-operated. Four of the nine were cured by the secondary resection; one was practically cured though there was still slight evidence of the disease; two were greatly improved. This would seem to indicate that if these cases are benefited but not cured, a sufficient portion of the gland has not been removed.

We have endeavored to discover the factors in exophthalmic goiter cases which would tell us what to promise these patients by operative treatment, but we have only been partly successful. Most of our unsuccessful cases (8 out of 13), had a considerable degree of dilatation of the heart and several of them had edema of the extremities at the time the operation was performed. While a complete cure could hardly be expected in this type of patient, in several instances the patients have derived considerable benefit from the operation; 25 of the 55 cured cases had some dilatation of the heart.

The oldest patient operated upon was 57 years of age; the youngest was 4 years and 2 months. Both were cured. The average age of the cured patients was 30.7 years, while the average age of those who derived little or no benefit from the operation, was 29.1 years. In the entire series of 121 cases, there were 107 females and 14 males. All of the males except two were benefited. The average length of time over which these patients had had symptoms before coming for consultation, was about the same in the group of cured cases, 19.3 months, as in those which received no benefit, 22.2 months. The average length of time required to effect a cure was 17.9 months. In the second and third groups, which include the patients who were improved but not cured, the average time during which the patient had had symptoms was greater, Group II, 31.6 months, Group III, 49.2 months. In spite of the fact that these statistics do not strongly substantiate this point, we believe that more cures and better results will be obtained in patients who have had a short history than among those having a history running over a number of years. In our cured cases, the average length of time symptoms had existed was 19.3 months, and it would seem reasonable to assume that if we could have treated those cases within the first year, we would have been able to cure a larger percentage.

Every one of the cured cases had some degree of exophthalmos (Stellwag or von Graefe) before operation; many of them complained of tension and pain in the eyes. In the majority of cases these symptoms entirely disappeared very soon after operation, and often they said that their eyes felt better even before there was much change in the degree of prominence. The exophthalmos is usually one of the last symptoms to subside; sometimes it will persist long after all other evidence of the disease has cleared up. However, the exophthalmos does diminish and entirely disappear in a good percentage of the cases; 75 patients reported that all of the prominence of the eyes had disappeared or was greatly diminished.

The functional result has been very satisfactory. A low collar incision just above the clavicle is inconspicuous. After the superficial tissue flaps have been reflected, the muscles can be severed just below their upper attachment on either side, if necessary. The wound heals and the normal motion of the head and neck returns in a few weeks. A small number of patients have complained of some disturbance in the voice, but this has always proved to be only temporary. It is apt to be the most marked about the fourth or fifth day after the operation when the operative edema is greatest. One patient totally lost her voice for two months, at which time it rapidly returned to normal. The characteristic squeaky goiter voice so frequently heard in exophthalmic cases before operation, usually changes to normal by the time the wound has healed. Some of our patients who speak with the normal motion of the vocal cords, complain that their voice is weak and tires easily, at times is husky, and that they experience difficulty in singing, but these symptoms usually subside in a very short time.

Twenty-one of the 176 patients operated upon in 1909 have died. Some of them had as many as three operations. Seven of the 21 died while still in the hospital; they were all females, the oldest 46 years and the youngest 15 years. Five of the seven had just a single ligation; 2 had resections. The average length of time of symptoms up to the time of operation was 29½ months. One of the patients who died following resection had been ligated by us five years previously. We saw her a number of times following ligation, and she seemed entirely well so we did not advise resection. About five years after the ligations, she had a hysterectomy performed elsewhere, and after this all of her goiter symptoms returned. Her hyperthyroidism was gradually growing worse when she returned to us for the resection. A review of the histories of these patients who died, reveals the fact that all of them were operated upon during the period when the disease was at its maximum severity. If at that time, we had realized as we do now, how important it is that no surgical interference be undertaken at the height of any attack of hyperthyroidism, we might have been able to carry some of these patients past the period of maximum severity before operating. The clinical diagnosis of the cause of death in all cases was hyperthyroidism; 4 showed dilated hearts and edema. The average loss of weight in these seven fatal cases, at the time of the operation, was 42 pounds; the average white corpuscle count 7,800, and the average total lymphocyte count 49.3 per cent.

Fourteen cases have died since leaving the hospital. One patient of this group had a recurrence ten months after we had done a double ligation and was operated elsewhere and died. The average length of time between the operation and the death in these 14 cases, was 14.1 months; the average age 34.1 years. It is to be noted that 11 of the 14 had dilated hearts, 4 had systolic murmurs; there was edema in 6 cases, and evidence of nephritis in 4. All of the 14 were females except one.

Considering this review of the cases which have died, it seems very evident that they were extremely toxic. Probably most of the patients who died after going home, as well as those who died soon after operation, died because of continued intoxication, which had already produced irreparable damage, usually in the heart, liver and kidneys. Better judgment as to just what to do for these cases and when to do it has lowered the mortality considerably in the past five years.

In letters received from exophthalmic goiter patients during the past few months, 11 voluntarily mentioned the fact that they had born healthy children since the operation. One woman had had three children. One patient said that she had been pregnant twice and that on both occasions she had had recurrences of all of her symptoms of hyperthyroidism, and on that account labor had been induced. From the report which the patient made, we could not be sure that she was really suffering from hyperthyroidism when she was pregnant as her chief symptom was vomiting, and this of course may have been the pernicious vomiting of pregnancy. However, before her hyperthyroidism began, she had had one normal pregnancy without serious vomiting. Eight of the women who have born children since their operations for hyperthyroidism, were classed in Group I, as cured cases; 2 were put into the group of improved, and one was included in the group which had derived no benefit from the operation.

We believe that we may conclude from this study of 121 cases, that we may expect to absolutely cure about 46 per cent, that in addition to this number, about 23 per cent will be practically cured although a slight trace of their old trouble may persist. Our statistics will show that an additional 4 per cent obtained some improvement, and that about 6 per cent reported that they had received no benefit.

Dr. Frank S. Mathews of Manhattan, in discussion said:

My cases of exophthalmic goiters, which are under twenty in number, have nearly all been operated on within the last three years.

The first change noted as a rule is in the subjective symptoms. Many patients will state of their own accord and within two or three days, even before the pulse has changed much in frequency, that the feeling of pounding of the pulse in the precordium and head has been very materially lessened.

Exophthalmos as an objective symptom, though improved, has not in any of my cases totally disappeared but the patients in a short time may feel much less fulness in the eyes and feeling of protrusion.

Gain of weight has begun in a few weeks and has often been very marked. A girl of fourteen increased in weight from eighty-nine pounds to one hundred and fifteen pounds in the first few months. Usually the excessive early gain in weight has not been maintained but the weight remains at a point above that before operation.

Some of the symptoms are more directly traceable to the excess of thyroid secretion in the blood than others. These may be expected as a rule, to show very considerable improvement. The improvement in exophthalmos and nervous control is much less marked. I believe most of the patients still have a pretty unstable nervous makeup. They are easily moved to tears and are much more easily upset by family quarrels or business troubles than the average person, even though their other signs of hyperthyroidism have disappeared. Physical strength is often remarkably restored in striking contrast to the nervous control.

SURGICAL CLINICS AND CLINICAL REPORTS IN HONOR OF DR. LEWIS STEPHEN PILCHER

(Continued.)

ON IMPENDING PERFORATION OF GASTRIC AND DUODENAL ULCERS.

Carl Fulda, M.D.

T must have been noted, even by those only superficially acquainted with the literature of perforated gastric duodenal ulcers, that the mortality in this class of cases is higher than it should be in view of the advances made in other acute abdominal conditions. A mortality of 73 per cent [1] or even of 40 per cent [2] does not compare favorably with the death rate of appendicitis or cholecystitis. And yet these latter conditions frequently present, at operation at least, far greater technical difficulties than do those cases now under discussion.

Aside from those determining factors, as age and general condition of the patient, which are common to all surgical procedures, there are two which decide what shall be the issue, once a perforation has taken place. They are:

1. The age of the perforation.
2. The operation performed.

Considering the second factor first, we find that it has received the greater attention. We will grant at once that a decided difference in the outcome is to be noted between those cases in which closure could be performed and those in which closure could not be done.[2,3] Failure to close the ulcer may be due to inability to find the perforation, to technical difficulties presented by entensive induration, or by its position.

This is admitted even by the most skillful and "from the character of the condition and its urgency it must happen that these cases will be operated upon by those not of long experience in emergency abdominal operations." [3] Petrén's table shows, that while 9 per cent were saved where suture could not be done, that even where closure was possible there was still a mortality of 46 per cent.

The most attention has been given to the question as to whether or not a gastro-enterostomy should be added to the closure. The suggestion of von Eiselberg to perform jejunostomy in certain cases of this type, has only very rarely been followed, in this country at least. As to gastro-jejunostomy, it is advocated: (1) When the infolding of large indurated ulcers has resulted in obstruction at the pylorus; (2) for the reason that closure alone does not cure the ulcer or a second ulcer present; (3) it is maintained that closure does nothing to prevent subsequent ulcer formation; and finally (4) because gastro-enterostomy will, in addition to its other advantages, allow earlier feeding and laxative medication.[5]

As to the question of obstruction, it will be acknowledged that it is difficult to obstruct the pylorus unless elaborate operative procedures are undertaken.[6,3] We have never seen it occur even where the infolding was very extensive. As to late results, such as obstruction and cicatricial distortion, it has been shown that this does not occur.[7] In regard to the second point of advantage, enough cases have been reported to show that within a short time after perforation and closure, the ulcers have healed absolutely. As objection to the third advantage, that of preventing subsequent occurrence of ulcers, enough evidence has been presented to show that subsequent ulcers do occur.[3,8,9] Lastly, these patients can be fed as early without gastro-enterostomy as with it; and as to the administration of laxatives, that will not generally be accepted as desirable.

We object to the performance of gastro-enterostomy in these cases of perforation because we are not convinced that it is a safe procedure in the presence of a peritonitis. Granted that the infection is of a low grade, it must also be allowed then that the escape of an acid gastric contents has lowered the resistance of the peritoneum. Further, its performance must add to the length of time of operation and so to the shock of the perforation in a patient whose resistance is low from prolonged gastric disturbance and who still has to look forward to a struggle with a peritonitis. We have never performed a gastro-enterostomy in "five or at the outside seven minutes." [5] Thirty-five to forty minutes, the time stated by Eliot [3] is more nearly like the length of time required by most operators.

The danger of a jejunal ulcer following gastro-enterostomy, though slight, must be added to the total of evidence against it. When we consider the question of cancer formation on an ulcer base [10] excision would be of greater value than gastro-enterostomy.

More important, however, than all this, is the fact that it has not been shown that adding gastro-enterostomy to closure of the ulcer has in the slightest degree lowered the mortality of perforated gastric or duodenal ulcer. Its advocates claim for it some value in the patient's future; but the present events in his life are those with

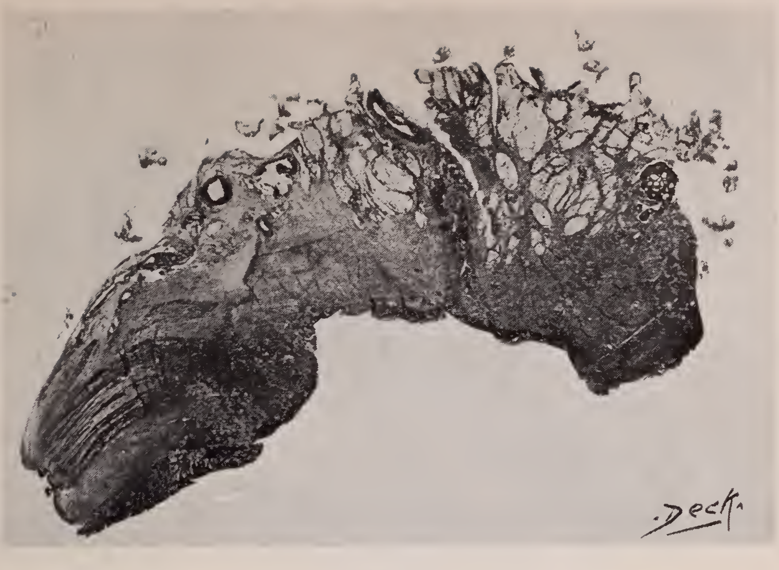

Figure 1.

Section of chronic ulcer of stomach in case two (all layers except serosa destroyed and perforation imminent.)

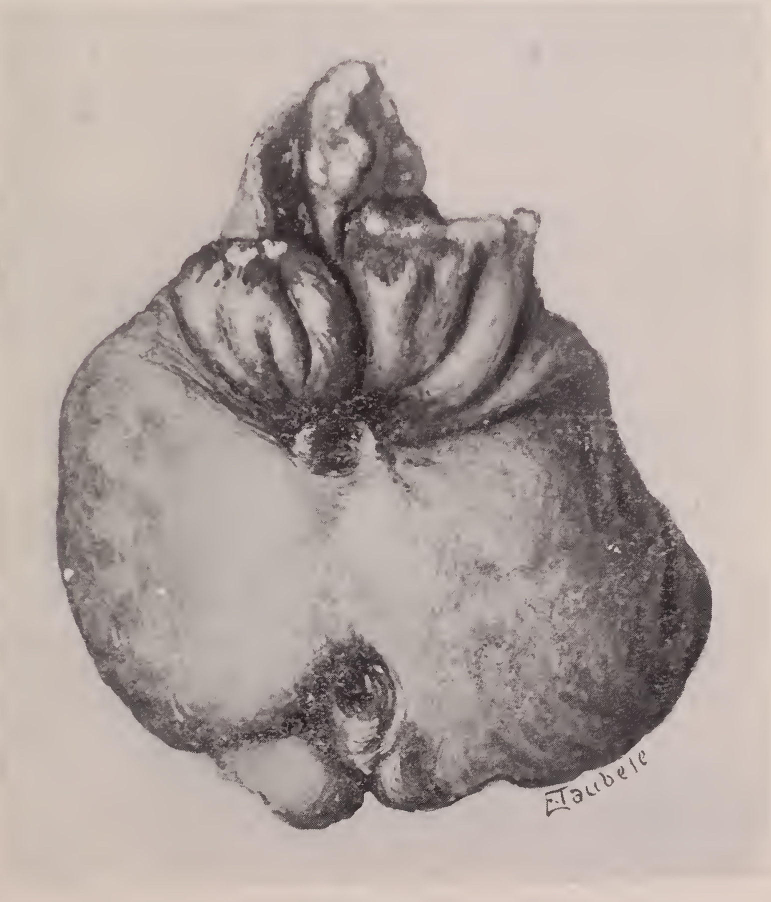

Figure 2.

Case V. Removed pylorus with portion of stomach and duodenum. Mucosa aspect. Ulcer directly in pylorus about to perforate.

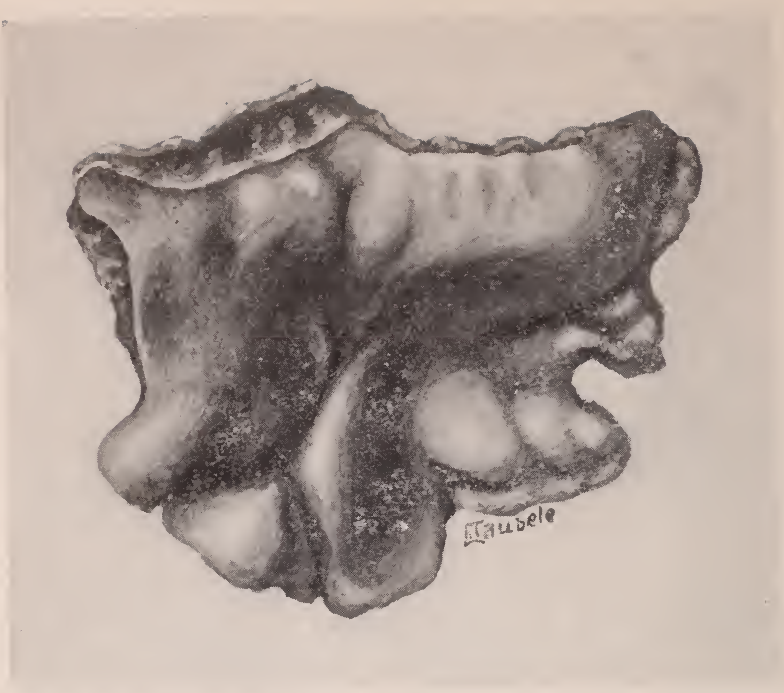

Figure 3.

Case VI. Removed pylorus with portion of stomach and duodenum. Intense inflamation of peritonium. Threatened porforation.

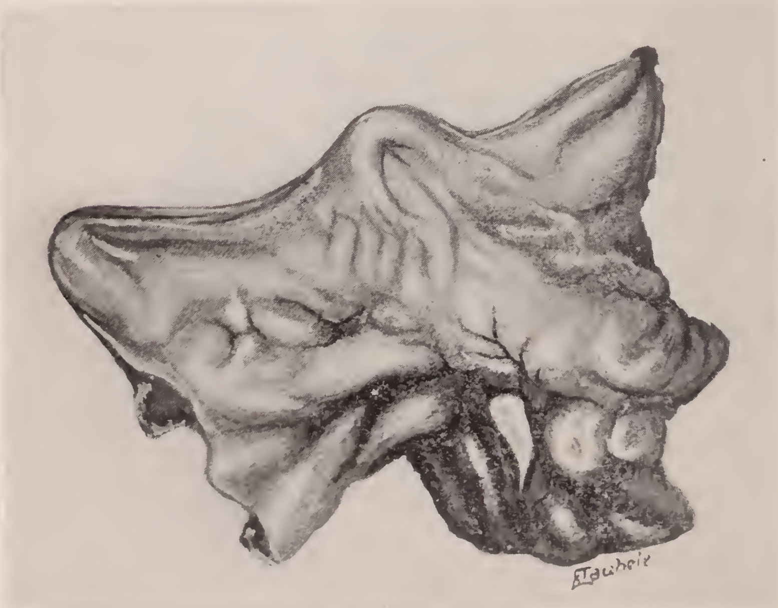

Figure 4.

Case VI. Mucosa side of Fig. 3 showing stomach side, duodenum, ulcer about to perforate and second ulcer.

which we are most concerned. If there were no other valid reasons against its being done, it should be omitted for the reason that it adds nothing to the chances of recovery.

Of vastly greater importance is the question of the time of operation. On this point there is, and can be, no dispute. The longer the interval between perforation and operation, the higher is the mortality; the further the peritonitis has advanced, the less is the chance of recovery.

Perhaps because it is generally accepted, little has been said on this point in comparison with the amount of discussion on "gastro-enterostomy or not." Now, one might suppose that from the ability to recognize a perforation early to the ability to recognize a threatened perforation would be a natural progression of events. And yet, with one or two exceptions, nothing has been said on this point. We believe that the important reduction in the mortality of these cases will come when an imminent perforation is recognized, and the necessary surgical steps taken; and not before that time. It must be remembered that early recognition and operation of a perforation, though important, are not alone sufficient.

Similar symptoms, of a perforated ulcer, may accompany vastly different pathologic conditions, as discovered at operation. In one case the perforation may be small with little leakage. In others there may be a wide opening with the escape of large quantities of gastric juice and even an entire meal. So that, even if operated upon early after prompt recognition, there will still be factors present beyond our control and variable in determining the end results. Again, these acute abdominal conditions do not always occur when time and place are convenient for patient and operator.

As a matter of fact it is doubtful whether the exact time of perforation is ever recognized. In the great majority of cases it is the spreading of the peritonitis that produces the alarming symptoms. The erosion has gone on slowly, approaching the serosa little by little. The inflammatory process spreads to the peritoneum which thickens in its attempt to prevent the perforation. The threatened point is further protected by omentum, sometimes by the under surface of the liver, by spleen, or even by the anterior abdominal wall. As the erosion goes on, one of several events may happen. Either the destructive process goes on faster than the protective process without, or the force within the stomach may become too great, and there results more or less profuse leakage, and a rapidly spreading peritonitis. It is not denied that there are cases in which little or no effort at a protective process can be seen, but in the greater number of cases the sequence of events occurs as described.

Epigastric pain and epigastric tenderness are the most important symptoms of impending perforation of gastric or duodenal ulcer. Other symptoms of ulcer may or may not be present, or have been present. The pain varies in severity a good deal with the patient's temperament, but it is decidedly epigastric, and, if present in the patient's past history, increased markedly. The tenderness is severe and localized, the maximum point thereof corresponding to the site of the ulcer. Rigidity of the abdominal wall, though present, is of a lesser degree than when the peritonitis is well under way. It is true that these symptoms are present in most cases of ulcers, but it is their increase, their comparison with previous conditions that is important.

It must not be forgotten that chemical, thermal and mechanical stimuli are felt only in the upper and lower ends of the alimentary tract. They are lost in the upper esophagus, and only perceived in the lower rectum. Ulcerative processes in the stomach and duodenum do not in themselves cause pain except when the inflammatory condition extends to the neighboring peritoneum. According to the direction in which the lymphatics carry the inflammation, the pain, by irritation of the lumbar and intercostal nerves, may be referred to organs that also send lymphatics to these nerves.[11] These anatomic relations explain the frequency with which less acute ulcerative conditions in the stomach and duodenum are confused with lesions of the gall-bladder, kidney, appendix or pancreas.[12]

Increased epigastric pain and increased epigastric tenderness then, in cases with a history of gastric or duodenal ulcer, are to be interpreted as meaning that the peritoneum over the lesion is taking part in the inflammatory process. Whether or not the necrosis also will extend to the serosa, that too, is beyond our control. The important fact is that the perforation is imminent and prompt surgical interference is indicated.

Brentano[1] observed that cases of perforated gastric and duodenal ulcer gave in their histories preliminary symptoms of perforation, such as cramps and stabbing pains and called them "Heralds (Vorboten) of perforation." Mitchell[13] observed that rigidity and tenderness are signs that the peritoneum is already involved, and are danger signals of perforation. McGuire[14] noted an increase in pain and tenderness just before perforation. Noetzel[15] hoped that the mortality of the perforated cases would be reduced by prophylactic means, that is, by early operation of painful ulcers. That is what we wish to emphasize and indorse, operation before, not after, perforation.

In the following seven cases the diagnosis of impending perforation was made and operation urged. Case I refused operation for the reason that several months before, he had recovered from a similar attack under medical treatment. His refusal was given in much the same manner that patients with appendicitis, in their second or third attack, beg for another trial of the ice-bag. And this we point out as an objection to the medical treatment of painful ulcers, that if the patient recovers for the time, as they do, in later attacks much valuable time may be lost trying the same treatment again. As a further objection to this plan of treatment we may add that many of these cases, for economic reasons can ill afford to undergo these long terms of rest. They must be returned to work as promptly as possible.[16]

CASE I.—German Hospital. No. 31546. O. B. 27. Admitted to hospital April 24, 1915. History of stomach trouble for several years. Pain and epigastric tenderness. Worse two months ago. Recovered under care of physician, rest in bed, milk diet, etc. On readmission, symptoms again worse for several days. Operation advised by physician and refused. Twelve hours after admission symptoms alarming. Operation April 24, 1915. Large indurated ulcer high up on lesser curvature. Considerable free blood in epigastrium. Perforation only made out by noting point of escape of gastric contents. Infolding with one deep suture and gauze tampon.

In this case the perforation took place while the patient was in bed in a hospital. Recovery uneventful, discharged thirty-ninth day after operation.

CASE II.—German Hospital. No. 30311. L. L. 49. History of stomach trouble for years. Periodic pain, vomiting and epigastric tenderness. Food increases pain. Recently all symptoms worse. Retracts epigastrium in walking. Tenderness in epigastrium over area midway between umbilicus and ensiform. Diagnosis, impending perforation of gastric ulcer. Operation November 12, 1914. Large indurated ulcer on lesser curvature. Peritoneum red and thick over lesion. Excision of ulcer and posterior gastroenterostomy. Recovery uneventful. Discharged twenty-first day after operation.

From the illustration (Fig. I.) it will be seen that only the thinnest layer of tissue separates the stomach and peritoneal cavities. There is little doubt in our mind as to the probability of perforation in this case.

Case III.—German Hospital. No. 30903. W. D. 22. Attacks of pain in stomach for two years, lasting weeks at a time. Pain came on soon after eating. Present attack began three weeks before admission. Artificial vomiting brings relief. Entire epigastrium tender, most marked to right of point half way between umbilicus and ensiform. Operation, February 5, 1915. Ulcer, indurated, of anterior surface of stomach near pylorus. Peritoneum red and thickened. Posterior gastroenterostomy. Recovery uneventful, discharged nineteenth day after operation.

In this case gastroenterostomy was deemed sufficient. The man has been well since.

Case IV.—German Hospital. No. 33090. H. P. 48. Had stomach trouble for five years. Sharp pains in epigastrium radiating to back. At first twice a year, attacks are now once a month and more severe in character. Artificial vomiting brings relief. Four days before admission pain is continuous. Eating does not influence pain! Diagnosis, Impendng perforaton of gastric ulcer. Operation, November 11, 1915. Ulcer high up on lesser curvature, adherent behind and bound down. Much induration. Peritoneum thickened and red. Posterior gastroenterostomy. Discharged cured twenty-seventh day after operation.

As in Case III, gastroenterostomy was sufficient to bring about a cure. Patient has been free from pain since.

Case V.—German Hospital. No. 33257. C. G. 34. One week before admission patient had pain in epigastrium, stabbing in character, vomited blood. Pain relieved by eating! Had tarrystools. Epigastrium rigid and very tender over area to right of point half way between umbilicus and ensiform. Diagnosis, impending perforation of ulcer at pylorus. Operation November 22, 1915. Large induration of duodenum pylorus and pyloric part of stomach. Peritoneum very red and ulcer can plainly be felt, especially its thin base. Resection of pylorus and indurated area either side thereof. Posterior gastroenterostomy. Discharged on thirty-second day, cured.

Aside from the extensive induration the case presented the interesting feature of a second ulcer on the gastric side of the pylorus (Fig. II). On searching for this patient to ascertain his present condition we learned that he had contracted pulmonary tuberculosis and had gone to some country sanitarium for treatment.

Case VI.—German Hospital. No. 33278. F. S. 38. Four years history of stomach trouble. Boring pain in epigastrium. Food aggravated pain! Vomited no blood Pain severe for last year. Starved on account of fear of food. Even milk caused excruciating pain. Same pain day and night. Entire epigastrium very tender but not rigid. Diagnosis, ulcer at or near pylorus. Operation November 23, 1915. Entire pylorus for 2.5 cm. (1 inch). both ways red, indurated and hard. Ulcer felt in pylorus with thin base. Under surface of liver adherent over ulcer but easily freed. Resection of pylorus and posterior gastroenterostomy. Discharged one hundred and sixty-nineth day after operation. (Figs. III and IV.)

It will be noted that in this case also, a second ulcer was found. The peritoneum was intensely inflamed and the ulcer base thin. On the twenty-eighth day after operation a gastric fistula appeared which failed to close until the hundred sixty-nineth day after operation.

Case VII.—German Hospital. No. 34408. P. S. 25 Denies any previous history of gastric disturbance. About an hour before admission he experienced sudden epigastric pain. Epigastrium is tender and rigid. Maximum point of tenderness over duodenum. Diagnosis, impending perforation of duodenal ulcer. Operation March 30, 1916. One and one-half hours after admission pylorus and first part of duodenum adherent to anterior abdominal wall. Only very slight leakage from ulcer at pylorus which may have been started by separating gut from abdominal wall. Entire pyloric portion of stomach, pylorus and first part of duodenum indurated. Adhesions freed and ulcer found in pylorus with base the size of a dime. Whole indurated area infolded without regard to occlusion of pylorus. Gauze strip to point of infolding. Discharged seventy-nineth day after operation, cured.

Dismissal in this case was delayed by a suppurative parotitis and by repeated x-ray examinations. The last report made May 22, 1916, six weeks after operation, is: Plate of stomach shows good tone, regular peristalic wave and perfectly normal contour (Report Number 406). On the fifth day this patient was taking all the fluids he wanted and in the twenty-seventh day was eating regular mixed diet. He vomited only once, an hour after operation. This case is added because, though there was infolding of a greater amount of gut wall than usual, there was no ill effects noted and six weeks after operation no distortion of the stomach was observed. It must be noted here, that the infolding is done in the long axis of the stomach and duodenum which probably occludes less than if the folds were made across the gut.

Table I.

No.	Age	Loc.	Duration of Sym.	Tenderness	Pain	Vomiting	Rel. of Food to Pain
1	27	Gast.	2 years	+	++	0	worse
2	49	Gast.	5 years	++	+	+	worse
3	22	Gast.	5 years	+	+	Induced	worse
4	43	Gast.	5 years	+	+	Induced	none
5	34	Duod.	1 week	+	++	+	relief
6	38	Duod.	4 years	++	++	+	worse
7	25	Duod.	0	+	+	+	—

In the table given, the symptoms are arranged in the order of their value to us. It will be noted that those considered most important are also the most constant. It may be added that the same relative value is placed on these symptoms in dealing with less acute ulcers or ulcers already perforated.

In conclusion we may state that gastroenterostomy, of whatever value in other types of ulcers, does not, when added to closure of a perforated gastric or duodenal ulcer, improve the patient's chances of recovery. Though early recognition and operation have given the best results, we submit, nevertheless, that the hope for improvement in the situation lies in operation before perforation.

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INTRATHORACIC SUPPURATION.

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SUPPURATION within the Thorax, which has been recognized and treated surgically in some of its forms so long, still exacts too heavy a mortality. It is only a few years since the mortality of general peritonitis approached 80 per cent. The Fowler posture, and the liberal use of saline by rectum following drainage, have nearly done away with it and we have almost forgotten the various ways in which such cases used to die. Nor do I intend to recall any of them now, but merely to point out that just as it once was in the abdomen, so still in the thorax, the high mortality and diverse complications of suppuration go hand in hand with tardy recognition and inadequate treatment.

We may recognize within the chest, suppuration in the mediastinum, in the lymph nodes, in the pericardium, in the lungs and in the pleura. It would be interesting to consider these groups in detail and to trace their inter-relations each to each, but time forbids and I shall limit myself to-night to the discussion of one form of thoracic sepsis only — empyema, dealing with that primarily and chiefly in connection with its mortality.

In a series of forty-seven cases observed during the last five years in my service at the Brooklyn Hospital and operated on by my associate, Dr. Long, my assistant, Dr. Tanner and myself, the total mortality was 15 per cent. This is not a high mortality as statistical reports run and yet I feel that it may be very considerably diminished if the cases be given the detailed and individual care that such a serious disease demands.

In a series recently reported by Wilensky from Mount Sinai Hospital, the total mortality was 28 per cent. In the first year 48 per cent, in the second year 31 per cent, in the third year 41 per cent, for the rest the average mortality was about 18 per cent.

Holt's statistics from the Babies Hospital give a mortality of 73 per cent of the children under one year and 58 per cent of those in the second year.

Lavrow's statistics — all of his patients being over thirteen years age — give a mortality of 45 per cent.

Zybile in a recent paper reports twenty-two cases in infants — with a mortality of 68 per cent.

The disease is most common in young children. Twenty of our cases were under five years of age, six between five and ten years and twenty-one over ten years of age.

In our series thirty-seven patients were males, ten females, a disposition which corresponds with that of larger groups and for which, so far as I know, no adequate explanation has been offered.

In twenty-five of the cases the empyema followed pneumonia; pleurisy in three; measles in two; pulmonary tuberculosis in one; appendicitis in two; abscess of the lung in one; tonsilitis in one; fractured ribs in one; in eight, so far as could be made out, it was primary.

It is interesting to note that although our hospital service includes a rather fair proportion of cases of fractured ribs and stab and bullet wounds of the chest, only one of these cases was followed by an empyema. No doubt, a larger proportion of cases follow measles, whooping cough and scarlet fever than our figures show because in a general hospital service such cases are not admitted and are transferred when they occur in the wards. It seems likely, however, that pneumonia is a usual intermediate condition in such cases.

Empyema sometimes follows entero-colitis in infants — as Wilensky and Zybile have noted. We have not found any of these cases in this series. It is an unfortunate combination and the mortality is high.

Only one case in this series followed tuberculosis of the lung — a case which left the hospital improved but with a small sinus still draining and was lost sight of. This group of cases has a particularly high ultimate mortality.

We have seen no cases in which empyema has followed an operation for catarrhal appendicitis or cholecytitis. No doubt they do occur but I am satisfied that in some of the cases so interpreted the abdominal diagnosis was at fault and the case was thoracic from the beginning with the not uncommon right-sided abdominal pain and rigidity. In the two cases in our series in which appendicitis preceded empyema gangrenous processes with abscess were found. One of these I operated on and the empyema made its appearance in the fourth week. The pus collection was retro-cecal and rather high. Her empyema was drained and she made a good recovery. A streptococcus was isolated from the pus from the chest. In the other case an appendix abscess drained by another surgeon, at another hospital, healed after protracted drainage. The boy's temperature, however, remained elevated and he failed to gain strength. Six months later a large empyema was drained. He developed an abscess of the brain from which he died.

We have recorded eight of our cases as primary, which is probably large. It is believed that the dividing line between a serous pleurisy and an empyema is largely one of degree, and that many of the pleurisies which are aspirated and then develop empyema would have gone on to suppuration just as promptly had they been let alone.

The sacculated empyemata usually terminate in general involvement of the pleural cavity before they are opened. Sometimes, however, they are found before this has occurred. Six of these occurred in our series — two diaphragmatic; one parietal; and three interlobar.

They may occur — 1st — between the diaphragm and the lung; 2nd — between the lung and the chest wall; 3rd — between the lobes of the lung near its root. It seems reasonable to believe that they also occur in the mediastinal surface of the lung, where their recogtion would be especially difficult.

The natural history of such a small pus collection is that it increases in size and reaches the pleural cavity sometimes, I believe, rather suddenly and with the production of a great deal of shock, just as a localized pus collection within the peritoneum may suddenly rupture with profound collapse. But if its walls of adhesions be fairly stout it may very well set up a localized process in the adjacent lung, penetrate its substance and perforate a bronchus and discharge by it. Such a complication, if promptly relieved by drainage, may terminate in recovery. It is apt, however, to run a protracted course with very grave disablement of the lung.

Bacteriology: The most common infecting organism is the pneumococcus with the streptococcus second, third, the staphylococcus, aureus and albus. In Wilensky's series about half the cases studied showed the presence of the pneumococcus and somewhat less than a fourth the streptococcus, about an eighth the staphylococci and the rest scattering or mixed. He publishes an interesting table in which he correlates the relationship of the infecting organism to the mortality and finds that the pneumococcus heads the list.

Pneumococcus	21% mortality
Streptococcus	3% mortality
Staphylococcus	16% mortality

He attributes this to the fact that so many pneumococcus empyemata originate in a pneumonia which is the cause of death.

Smears should be made as well as cultures. If bacteria are found on smear but not on culture it would indicate that they are dead. Clear fluids with bacteria would lead one to expect a purulent exudate to form. Turbid fluid with polynuclears and no bacteria would indicate an inflammatory process near. Turbid effusions with living bacteria show an active process. When a purulent exudate shows no bacteria in smear or culture it is very probable a tubercular process.

In our series the				
	Pneumococcus	was found	14	times
	Streptococcus	" "	6	"
	Staph. Aureus	" "	5	"
	Mixed cultures	" "	4	"
	No growth	" "	6	"

We have used autogenous vaccines rather consistently and feel that they have been of service in shortening the time of convalescence.

Diagnosis: Empyema most often follows a pneumonia or a pleurisy. It is to be suspected when the loss of flesh and strength and the course of the fever are too high and when a physical examination reveals fluid in the chest. Both the symptoms and physical signs of empyema are in a way the same as those of pleurisy with effusion but there are certain special features that may well be noted. The pain in purulent effusion is specially severe. It is an old rule that if in a pleurisy or a pleuro-pneumonia, the pain is so severe that hyperdermics of morphine or the ice bag are called for, empyema is almost certain to supervene. The fever is usually higher, the oscillations greater and chills and sweating more common. The physical signs of fluid in the chest are present in the large effusions filling a considerable part of the cavity. In sacculated empyemas they may be quite deceptive. The constant tendency is to resort early in suspected cases to the use of the aspirating needle for verification, and in many cases, after repeated attempts and failures to find pus, a later aspiration is crowned with success and the case is turned over to the surgeon for treatment. So often does this occur that the question cannot but arise — are not some of these negative aspirations themselves responsible for the pus collection which later explorations reveal? Are they not really stab wounds of an infected thorax and do not some of them at least add the factor of a partial pneumo-thorax to the problem? In this connection the experiments of Burckhardt are interesting. With a very fine canula he injected air and a staphylococcus bouillon culture into the pleural cavity of rabbits. In control animals staphylococci were injected without a preceding pneumo-thorax. In only one of thirteen pneumothorax animals did an extension pleural infection fail to develop, of eight control animals only three showed noteworthy pleural infection. Burckhardt concludes that both total and partial pneumo-thorax predispose in the highest degree to infection of the thoracic cavity. It would seem wise therefore to exhaust other means, including x-ray studies, before beginning aspiration in cases of mere suspicion and to let the aspiration, when it does occur, immediately precede operation, if such a procedure is indicated. It should also be emphasized that when aspiration is done the needle should be attached to the syringe before thrusting it into the chest and withdrawn without detaching it if suction fails to find pus, so that a pneumo-thorax may not be induced as a result of a diagnostic measure. Examination by radiography and fluoroscopy is a measure of increasing importance. It is greatly to be hoped that perfection in technique may place these measures in a diagnostic, rather than a merely corroborative position.

Treatment: Anaesthesia — The fact that the largest factor in the mortality is a coincident pneumonia makes the added insult of a general anaesthesia undesirable. We feel that a local anaesthetic, preferably novocaine in ¼ of 1 per cent solution with adrenalin and salt solution, is indicated in all cases of thoracotomy or rib resection. Aspiration is indicated in all cases in which the lung of the opposite side shows involvement or in which the empyema develops during the course of a pneumonia before the crisis has occurred, in double empyema, in very young and very sick patients. We are persuaded that even if it be necessary to repeat the process several times it is desirable to do so rather than add the burden of a pneumo-thorax to the already burdened chest. The aspiration should be done with care and proper precaution taken to see that air is not introduced through an open needle.

Murphy's method — aspiration with the injection of formalin and glycerine was tried in a few cases — three or four — I think, with no good results and no mortality. All had rib resection after the injection method had failed.

Intercostal Incision: A certain difference of opinion still exists as to the relative value of intercostal thoracotomy and of rib resection. The advantages of a simple incision are the fact that it takes very little time and will give a vent nearly as complete as a rib resection. The disadvantages are that drainage is apt not to be so free and that secondary rib resection is often required. I think that in young children, however, it is a resource and should be used more often than it is. It certainly causes less shock than a rib resection and limits the time of terror which a local anaesthetic does not control. Wilensky reports in his series that all the cases of intercostal incision were done on cases too sick to tolerate rib resection, that the cases that did not die within forty-eight hours made complete recoveries. The favorable site is in the midaxillary line in the sixth or seventh interspace. An aspiring needle is inserted, with syringe attached, and pus is withdrawn. Then a long bladed, sharp pointed bistoury is thrust along the needle into the chest, keeping close to the upper margin of the rib as does the needle. When the bistoury is in the chest it is passed forward along the rib for a distance of an inch and a half. The pus gushes freely along the knife blade, the two rubber drainage tubes are passed into the chest and the knife is withdrawn.

Thoracotomy with resection of a portion of a rib: This is the operation of choice because it gives ample drainage if properly placed; because it allows explorations of the cavity at the time of operation and because through it the large masses of fibrin which occur in pneumococcus infections may be readily removed. The chest should be opened low enough to drain the cavity well without going so low as to form an oblique sinus by the approximation of the diaphragm and chest wall during healing. It should also be placed in front of the latissimus dorsi to avoid annoyance during the operation and complications during healing. These conditions are met by resecting a portion of the eighth rib in the mid-axillary line. This has been our usual procedure. The incision is quite frequently placed too high so that a pocket is left between the diaphragm and the chest wall which is hard to care for and frequently leaves a sinus. On the other hand the suggestion of Thomas to make the opening for drainage in the eleventh rib has not appealed to us. It is quite possible to make the incision so low that only by long retention of tube drainage can satisfactory drainage of the upper part of the cavity be assured. We prefer an incision parallel to the rib to a vertical one. The necessary trauma is lessened and no sutures are needed. We have used the Wilson tube in a certain number of cases but on the whole prefer two rather short tubes which can be taken out and cleaned. The Wilson tube is not easy to replace painlessly. It is apt to be left in place too long and predisposes, I am satisfied, to the danger of mixed infection. Whatever mode of drainage is used it should be carefully accounted for: three of our reoperations were for the removal of drainage tubes left in the thorax.

It is quite possible, in the cases that follow pneumonia, to operate too soon. This is most clearly brought out by Wilensky in his splendid paper referred to before. The mortality among the cases operated upon under one week after the disease was recognized was 47 per cent; in the second week 25 per cent; in the third week 21 per cent. Operation should not be done when the pus is still thin and the lung freely movable and if there are still signs of unresolved pneumonia in the lung on the other side. The additions of a pneumo-thorax to a partly resolved pneumonia may very well light up the inflammatory process in the lung once more with fatal result. On the other hand if operation be too long delayed and the lung becomes fixed by the thickened pleura, the difficulty in getting expansion is only too well known.

Lloyd, in 1906, devised a method for breaking up adhesions during operation so as to allow the lung to expand. His mortality was about 20 per cent and he was satisfied that his cases healed with few sinuses.

Recently Lilienthal has again called attention to the same procedure, recommending a long intercostal incision with spreading of the ribs. He reports twenty-three cases with four deaths. The procedure is radical and is suitable in the subacute cases.

After treatment: Dandy and Rountree published in 1914 studies in peritoneal and pleural absorption with reference to postural treatment, which are interesting. These experiments which in the main consisted in the injection of phenolsulphonephthaline and the determination of the time of its appearance and the quantitative output in the urine led them to the following conclusions so far as the pleura is concerned, "the results are strikingly similar in every way to those obtained in testing absorption from the peritoneal cavity, the appearance, time and the quantitative output are practically the same. Very curiously the same discrepancy in absorption is present in both the peritoneal and pleural cavities — *i.e.*, absorption is practically equal in all positions except the vertical, head up position in which it is definitely less 13 per cent. We are also at a loss to explain this upon any histological or anatomical grounds." It is to be noted that these experiments were made on dogs, animals whose postural behaviour is somewhat different from that of man. The suggestion contained, however, seemed worthy of trial. We are now maintaining a sitting posture in cases of empyema. Further experience will be necessary before any report is to be made. The general treatment — that of sepsis in general — is to be insisted on. Fluids by mouth or by rectum must be given in such amount that urine in sufficient amount is passed.

Nourishment in sufficient amount is essential.

The preparation and injection of an autogenous vaccine in suitable dose is desirable. The dressing, at short intervals, of the draining wound is essential. This will usually have to be changed at least every four hours for the first two days after which, the discharge growing less, the intervals may be greater.

The skin should be cleansed with alcohol at each dressing and an antiseptic gauze should be applied to prevent a mixed infection. On the second day the tubes should be removed, boiled and replaced and one gradually shortened. It is desirable that the dressing should be removed during the third week. If it is allowed to remain longer than four weeks a sinus is almost sure to result.

The expansion of the lung may be favored by various methods — in adults the use of a spirometer at two hours intervals during the day is satisfactory and lends some interest to the exercise. In children, blow bottles, toy balloons or, as soon as the general condition permits, active play with other children serve the same purpose.

The complications to be dreaded are: *Pneumonia,* which may supervene at any time in the convalescence but which is most likely to occur during the first or second week; *Middle Ear suppuration,* which should be looked for in every case of secondary rise of temperature; *Secondary infection of the drained cavity,* which will almost surely occur unless careful antisepsis is preserved.

Pneumonia is the most common cause of death after operation. I am convinced that it occurs most often in cases in which the inflammation of the lung was present before operation and in which the added burden of the operation and the pneumo-thorax was too heavy to be borne.

Occasionally a secondary rise of temperature will occur with the cessation of a previously free discharge. This may mean the damming back of pus in a concealed pocket and this condition should be looked for. An excellent instrument to use for this purpose is a 20 F male sound with a short Van Buren curve. In many cases, however, it is only an evidence of a secondary infection. The discharge ceases because the surface of the pleura is once more acutely inflammed. I believe that this complication is well treated by careful irrigation with antiseptic fluids at body temperature and at low pressure. It is most likely to occur in the second week when the flow of the fluid from the chest has abated somewhat and, while not as a rule fatal, it delays the time when drainage may be removed and favors sinus formation. Cultures should be made and the organism recognized if possible — and if streptococci, a vaccine will be of service. The pyocyaneus and staphylococcus infections respond promptly to irrigation with suitable antiseptics.

To sum up: I am satisfied that empyema in children, as well as adults, will well repay careful diagnosis before resorting to aspiration.

That aspiration should be part of the operation procedure.

That the operation should be selected in its application to the individual case.

That the "After Care" is of at least as much importance as the operation itself.

SOME PHASES OF PISTOL SHOT WOUNDS IN CIVIL PRACTICE.*

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PISTOL shot wounds, a type of the general term gun shot wounds, are traumatisms produced by projectals from firearms. As to its final location and the damage it will do when the human body is its destination, almost as much mystery accompanies the bullet leaving its channel of discharge as surrounds the darting meteor in its celestial flight. Through its freak, in one instance the victim is struck dead; in another, semi or profound coma spreads over him like a pall. From nerve irritation or nerve necrosis exaggerated nerve stimulus or its limited absence assert themselves. Muscle groups fail to functionate; contractures of countenance or limb or both sometimes follow. The permanent or transient disability or the consciousness of carrying a foreign body within their economy, frequently renders the life of the patient a weighty burden.

In gun shot wounds, as a rule, the surgeon operates promptly, or he immediately advises against surgical interference, except to palliate. When the abdomen is the site of injury, the surgeon with due aseptic care opens it quickly, if the patient's condition will permit. If it is comparatively safe, in his judgment, he is thorough in searching the digestive tract through its greater portion even though he has discovered one or more penetrations. The solid organs will not pass unnoticed.

My experience in gun shot wounds has been principally in two hospitals situated in the thickly settled parts of the Borough of Brooklyn, and is confined with one exception to wounds made by the pistol.

A peculiar phase of a missile leaving a pistol and entering the human body is that it often seeks its destination through a circuitous rout, leaving behind it a wound tract which is frequently inpenetrable; in other words, hardly if ever can a pistol bullet be detected by following its channel of entrance. The peculiarly arranged anatomical structures of the human body seem to vie with one another in their effort to close the path and to deceive the surgeon in his search for the offending body.

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* Read at a regular meeting of the Brooklyn Surgical Society, March 2, 1916.

The structial fabric of the skin, muscle and fascia, by their flexibility and elasticity close sometimes snugly the entrance made by the pistol bullet. The probe, an instrument of very questionable value, when used under the strictest aseptic precaution often fails to pass any distance into the bullet wound. When this is discovered the probe should be abandoned.

A pistol ball producing a wound is spoken of as a primary missile when it is propelled directly from its course of explosion, but if this primary missile sets in motion another foreign body, which enters the tissues, this body is known as a secondary missile. An example of this occurred some few years ago when in a brawl a man fired a pistol at his supposed enemy striking the buckle of his suspender driving it into his chest wall. I removed this easily; the ball was never found, this buckle was a secondary missile.

Most of the gun shot wounds in civil practice are made by the ordinary pistol with low velocity at short range, and in my experience at least with unjacketed bullets. On this account they are easily deflected or arrested by bone. As an example of this, some few years ago the ambulance brought into St. Mary's Hospital a man about fifty-five years of age, who with suicidal intent attempted to fire a pistol bullet into his heart; it however, struck his seventh rib well to the left of the sternum and apparently following the course of the rib lodged underneath the skin some little distance to the left of the seventh dorsal vertabra where we removed it. He had no symptoms when he arrived at the hospital nor any during his stay which was about a week.

Pistol bullet wounds, in civil practice, are comparatively free from immediate infection. I have not seen an immediately recognizable infected wound following the entrance of a pistol ball into the muscles, facia, bone or brain tissue, or the solid organs of the abdomen, liver, spleen or kidney. Infection will soon occur, however, when a bullet enters the abdomen perforating any part of the alimentary canal; these cases are operated on at once. Herbert and other investigators state that in many wounds produced by the small caliber bullet minute particles of woolen, cotton or linen fabrics are carried in from the clothing; they therefore, hold that all bullet wounds are contaminated but not infected to an extent sufficient to cause inflammation and suppuration and that the natural resistance of the tissues is sufficient to overcome the few micro-organisms introduced.

In all pistol ball traumatisms an immediate action for protection and repair as in every traumatism is set up. Serum is poured out, leucocytes accumulate, phagocytes begin their work; the bacterial action of the serum sets in. While these processes are in action, additional irritation by the probe, fingering or instrumentation will frequently decide the victory in favor of the destructive process of the bacteria.

In this matter many of us in the remote and near past have been guilty of the sin of commission while now we are just as energetic in cherishing the virtue of omission. At this time the x-ray in civil practice takes the place of instrumentation in seeking the location of pistol bullets. The surgeon's pet anxiety in pistol shot wounds is the lodgment of bullets; bullets from the ordinary pistol lodge easily, the reason for which has already been given. Usually the question paramount in the surgeon's mind is whether or no a lodged bullet should be removed.

It is at present an established fact that both large and small bullets often become encysted and cause no trouble. When this is surmised such missiles should be let alone. When, however, in the experience and judgment of the surgeon the bullet is doing harm and can be taken out without jeopardizing the life and future health of the patient, it should be removed; in fine, when the operation is more dangerous than the presence of the bullet, let it remain. I now desire to report a few cases suggestive of the foregoing statements.

CASE 1.

GUN SHOT WOUND OF THE BRAIN.

Some years ago the ambulance surgeon brought into my service at St. Catharine's Hospital a man aged thirty-five years suffering from slight shock due to a pistol shot wound in his left temple. Grains of black powder studded the narrow space about a small bullet wound. There were no symptoms present which would indicate brain injury. The only pain or distress complained of was in the dressing of his wound. We had no x-ray apparatus in the hospital at that time, consequently the bullet was not located. The patient left the hospital in two weeks, apparently well. We were unable to trace him afterwards. This man was shot by a jealous companion while walking at his side, hence at short range. We did not see the pistol, but from hear-say presume it was of the ordinary type. In this case we have a small bullet wound, short range, no immediate infection, lodgment, apparent recovery.

CASE 2.

GUN SHOT WOUND OF THE BRAIN.

A very similar case, not my own, occurred at St. Mary's Hospital about ten years ago, in the service of Dr. Walter Wood. A detective, aged thirty-eight, was shot by a female in the left temple at close range. The shock, wound location and powder staining were about the same as in Case 1. This man was kept under observation in the hospital for about two and a half weeks. No x-ray picture was taken because at that time we did not have an apparatus at St. Mary's Hospital. Up to two and a half weeks there were no symptoms, and the man returned to duty. Through the late Dr. Terry, then a police surgeon and also a visiting surgeon to St. Mary's Hospital, we were able to follow this case with the following result. One year after the injury the patient fell to the street in a convulsion from which he soon died. Post Mortem showed abscess of the brain, the details of which we were unable to get except that it was in the frontal lobe. In this case we have a pistol bullet wound, short range, no immediate infection, lodgement, death from a latent brain abcess, about one year later.

In reference to bullet wounds of the brain where lodgment takes place and which are symptomatically latent, followed by an encapsulated brain abscess also latent, Ballance states that it is conceivable that in gun shot wounds of the brain, infective particles have been driven into the brain substance, in fact, a stab culture has been made. He also states that the moment when infection reaches the brain is not commonly marked by any recognizable symptoms.

In Case 2, a bullet entered the parietal region penetrating the membranes and escaping the important centers in the cortex, buried itself in the white matter of the brain in the frontal lobe. There was perhaps infection of low virulence, evidently stayed by natures efforts. Whatever the infection, whatever its virulency, it caused a connective tissue capsule formation which enclosed the pus. Pathologists recognize two distinct and separate conditions in brain abscess; one without a capsule, and one with a capsule. Dr. Starr in speaking of the latter describes it as a collection of pus enclosed in a connective tissue capsule lying within the white matter of the brain, and quite distinct from brain tissue. This form of abscess occasionally shows a tendency to progress rapidly, but more commonly lies in the brain like a foreign body, and does not increase in size. Such an encapsulated abscess may remain in the brain for many years and give rise to no symptoms whatever, and be a surprise to the Pathologist at autopsy. Such was the abscess in Case 2, plus the etiological factor — the bullet, the capsule enclosing the bullet as well as the pus.

CASE 3.

Pistol Shot Wound of the Skull.

Edward B., age fourteen, November 19th, 1908.

While on the street a playmate placed the muzzle of a thirty-two caliber revolver close to the patient's left external auditory meatus, and not knowing it was loaded, pulled the trigger. The boy stated some time afterward that at the moment he was shot he felt dizzy, put both hands to his head, and then fell unconscious to the ground. When the ambulance surgeon of St. Catharine's Hospital found him he was lying in a pool of blood. I saw the boy a few hours afterward while still unconscious. On removing the dressings from the ear about half an ounce of crushed brain tissue escaped with considerable blood. A steril compress was applied to the wound, and the usual methods taken to improve his general condition. We all confidently expected the boy to die in a few hours. He, however, gradually recovered from shock and slowly regained consciousness. The patient's condition remained unchanged until November 29th, ten days after admission when his temperature rose to 101.5; the following day it went up to 104. From this date it gradually decreased, varing from 102 to a fraction above normal until January 12th, when it became normal and remained so. Several x-ray pictures were taken without showing a foreign body anywhere in the skull. The most interesting aspect of the case was the clear picture of the cranial nerve involvement, fifth nerve anesthesia of the left side of the face, loss of taste and furring of the tongue; sixth nerve paralysis of the left external rectus with inability to rotate left eye outward; seventh nerve complete facial paralysis on left side; eighth nerve complete deafness on the left side with a tendency to deviate to the left.

The patient's chart was discontinued on January 22nd, 1908. He left the hospital in good physical condition with the exception of the damage which remained to the 7th and 8th cranial nerves as shown in Bell's Palsy on the left side of the face with deafness to the left ear.

Because of his excellent physical condition, his parents refused to consider any operative procedure, and three months following the injury the boy resumed his work in a factory.

In view of the interest we felt in this case, I had the boy call at my office occasionally. Shortly after he left the hospital I asked the late Dr. E. Shepard, who was then aurist for St. Catharine's Hospital, to examine the patient's ear. His report was as follows: Atresia of the ear from cicatrization, admitting only the smallest probe. With his usual caution, he stated that if a bullet did enter the auditory meatus, he believed it was in the tympanic cavity from the fact that the probe struck something which did not seem normal to that locality, and also that the cranial nerves were damaged at their exit from the skull rather than deeper down, but that he was not prepared to commit himself even to a tentative diagnosis. I ventured to state at that time, that the freak which the bullet played in the patient's head would be unexplained during his life. That it should be sought for by operation goes without saying. The termination of this case is as follows: On February 2nd, 1911 just two years, one month and thirteen days following the accident, the boy remarked to his mother that he did not feel well; she stated that he should remain home for the day. He gradually grew worse with pain in the head, vomiting and finally went into convulsions. A neighboring doctor was sent for, but to no avail; the boy died the following morning. I was invited to the Post Mortem by the Coroner's physician (Dr. Wuest) where it was found that the bullet had entered the tympanic cavity, and buried itself deeply in the petreous portion of the temporal bone, so much so indeed that it was removed with much difficulty, requiring a forceps aided by a small chisel. It was almost entirely covered by bone, so that from any angle the x-ray was unable to detect it. The middle fossa was filled with pus and debris; the left tempro sphenoidal lobe had a hollowed out necrotic cavity as large as an English walnut. Our theory was that for a long time the debris of necrosis and pus was, at least partially drained through the ear, and when this channel either from granulation or by advanced atresia became so obstructed as to preclude drainage, the pus in the middle fossa not being encapsulated caused pressure necrosis and further destruction of brain tissue which brought about the symptoms already spoken of, followed by death. The pus with accompanying debris, could have been drained through the roof of the mastoid antrum or by trephining the squamous portion of the temporal bone, but such an operation would not be consented to.

Dr. Pierce Baily, in his excellent book on accident and injury in relation to disease of the nervous system states that there is no domain in medicine and surgery in which more caution in diagnosis and prognosis is required than head injuries. The freak which the bullet played in this patient's head bears out this statement in a moderate degree, and also marks a peculiar phase of pistol wound of the head.

CASE 4.

Pistol Shot Wound of the Chest.

On January 1st, at 1 a. m., 1916, I. G., a detective, age thirty-five, was brought to St. Catharine's Hospital suffering from pistol shot wounds. Two in the right arm and one in the right side of the chest, two inches below the nipple; ball thirty-eight caliber, short range. Patient was unconscious but suffering from shock. He had cough accompanied by spitting of blood; complained of severe pain in right side of chest; pulse 120; temperature 100 1/5 due probably to hemorrhage and shock. He had hemothorax and an increase in size of the injured as compared with the well side of the chest with loss of vocal resonance and fremitus with some fullness of the inter costal spaces. Respirations were rapid and shallow, but comparatively easy and regular.

A prophyalatic dose of 2,500 units of anti Tetanic serum was given followed by frequently repeated doses of ergot. For a time the dullness extended slowly up the right chest. The chest was then strapped to restrain the action of the lung. At this time we took it for granted we had a lodged bullet which of itself was doing no harm, but that the patient was suffering from the wounds it had made in seeking its destination which seemed to us was through some part of the lung, pleura and possibly the liver. That we were dealing with a lung hemorrhage into the pleural cavity there was little doubt, and for the present this engaged our attention. The urine and faeces were examined for blood and none found. The patient wore an anxious expression and was restless requiring small doses of morphine. On January 3rd, we thought his hemorrhage sufficiently controlled to move him to the x-ray room as we were anxious to locate the bullet, not that we would operate for its removal, but to make sure that its position was not harmful. The ball was located well down in the right lobe of the liver.

Following the exertion of going to the x-ray room his temperature went up to 103 accompanied by chills which lasted fifteen or twenty minutes. On January 4th, morning temperature was 102, evening temperature 106 accompanied by chills. On January 5th an aspirating needle was passed into the chest and blood was drawn and examined for pus cells by Dr. Moitrier, Jr., Assistant Pathologist at St. Catharine's Hospital, but none were found.

The patient showed a leukocyte count 19.6000 and polymorphonuclear 87%. Van Cott's Vaccin was now used 1 cc. at 9 a.m., and the same at 6 p.m., until January 7th, when it was used once at midday and discontinued. On the 10th day his temperature which had varied between 102 F. and upward, rose to 106 2/5 F. The liver became somewhat tender; the eyes showed a shade of yellowness. We then felt that an abscess of the liver was developing and an operation was done for the purpose of drainage. On opening the abdomen over the liver, the entrance and channel of the bullet was readily seen and followed. The probe passed through the bullet tract, permitted air and pus to escape and struck the bullet well down in the wound. This was with some difficulty removed, and the liver drained with gauze in the usual way. When the dressings were about to be applied the patient expired. The anesthetic was ether and oxygen given by a skilled anesthetist.

Post Mortem showed the following: One bullet entered the palmar surface of right hand ½ inch below wrist joint, exit about last metacarpal bone; the other the ulner surface of forearm about its upper third, exit on a line just opposite. The third entered the chest at the 5th inter space on right side, passing through the pleura diaphragm and liver emerging through diaphragm again and entering the base of the right lung in which it made a good-sized cavity. The patient probably died of collapse of the lung due to its injury, accompanied by exhaustion produced by infection, the traumatism and accompanying liver abscess. We surmize that the bullet after passing through the liver then passed through the base of the right lung and striking a vertabra was deflected and thrown back again into the liver where it was found. With the hemorrhage under control the bullet lodged and doing no further harm, we hoped that the infection already produced, by the traumatisms, might be fought off by treatment and the patient's resistance. This probably would have been accomplished had not an abscess of the liver developed. The spongy tissue of the lung offers little resistance to a bullet, because of this the missile does not transmit its energy, hence its destructive effect is slight.

Major Borden, surgeon of the United States Army, states that gun shot wounds of the lung where no large blood vessel is wounded, and there is moderate infection, there are not only few symptoms present, but uninterrupted and rapid recovery usually takes place; the same may be said of the liver. In these cases the bullet should not be sought for. In the case just reported this rule was observed, but the traumatism already infected finally produced an abscess of the liver which demanded operation and drainage.

CASE 5.

PISTOL SHOT WOUND OF THE SPINAL COLUMN WITH INJURY TO THE CORD.

Patient L. A., an Italian by birth and resides in the Borough of Brooklyn, N. Y. While a young man was disputing with the patient's father, the patient interfered when the young man drew a pistol and pointed it at the breast of his defenceless victim. He, however, turned his side, the bullet striking him in the region of the left shoulder, thence passing through his left lung, burying itself in his spinal column about the 6th dorsal vertabra. The range, as far as we could learn, was about eight feet; the bullet a thirty-two caliber.

On entering St. Catharine's Hospital he was conscious, but suffering from shock. On examination it was found that his lower extremities were paralyzed, with both rectal and bladder control gone, giving the impression that the cord was divided. The patient went through a traumatic pneumonia which seemed to lessen his chances of recovery exceedingly. The patient recovered in due time almost entirely from the paralysis and from all other symptoms with the exception of a slight spastic paresis of the right leg. An x-ray picture taken at the time showed a bullet in the body of the 6th dorsal vertabra. The presumption is, however, that the paralysis shown in this case was due to hemorrhage about or into the cord rather than to the direct injury, from the fact that the gradual improvement went on until the patient reached the state we find him at the present writing, namely, with a slight spacity of the right leg. He was in the hospital from November 7th, 1908 to January 1st, 1909.

CASE 6.

GUN SHOT WOUND OF THE SPINE-LAMINECTOMY.

Patient John G., age twenty-one years, and residing in the Borough of Brooklyn was brought to St. Catharine's Hospital on January 12th, 1914, suffering with gun shot wound of the spine. He had been shot with a pistol at a distance of about ten feet, ball entering the back four inches to the right of the spinal column on a level with the spinous process of the 11th dorsal vertabra.

Neurological examination showed knee jerk absent, abdominal reflex present; no Babinsky. An area of analgesia on the inside of both thighs, legs and dorsum of both feet. Posteriorly anesthesia and analgesia over both buttocks and on posterior aspect of thighs and legs, and an anesthetic strip down both legs posteriorly. Injury at the level of the 11th and 12th dorsal vertabra with legs completely paralyzed; control of both sphincters lost. Area of anesthesia corresponds to the first, second and third sacral segments of the cord. Temperature ranged between 99-100. X-ray showed the ball in the 11th dorsal vertabra.

Operation February 4th, 1914. Incision about ten C.M. in length was made over the spinous process of the 10th, 11th and 12th dorsal vertabra, the bullet wound being on a level with the 11th spinous process. The supra and infra spinous ligaments were cut. After disecting the erector spinous muscles from either side and the periosteum being peeled off, the lamina was readily exposed. The spinous process of the 10th and 11th dorsal vertabra were then cut away with a curved bone forceps, and the lamina was chiseled from either side, then removed with a rongeur. The bullet was removed from the left side of the spinal canal. It was imbedded in the left side of the cord and when removed there was a gush of spinal fluid which was kept back with steril gauze sponges. The bullet had penetrated the dura close to the right pedicle. The lamina had been fractured where the bullet entered it and some fragments of bone removed. It entered the vertraba at the lower angle of the lamina close to the transverse process at its base.

On February 8th, 1914, right knee could be raised one and one-half inches from the bed and the patient could move all of his toes; also raise the left leg a short distance. Sensation in this leg was not much improved.

This man is living and enjoying good health with the exception of his leg paralysis which is slightly improved; he goes about on crutches. We now feel that while he has had some regeneration of the cord, it will not proceed further.

Wounds of the spine when the cord is involved, according to military surgeons, are among the most fatal of gun shot traumatisms. The common sequela of the involvement of the cord are spinal meningitis, myelitis, disease of the kidneys, cystitis, and bed sores. These conditions are all serious and frequently end fatally.

In civil practice wounds of the spine are comparatively rare, and we are told by military surgeons that they are comparatively rare in times of war. This can be easily explained by both the position and protection of the spine.

At St. Catharine's Hospital out of eighteen hundred surgical cases for the year 1913, there were twenty-six gun shot wounds with but two of the spine.

I am under the impression that the seriousness of gun shot injuries of the spine in civil and military practice is about the same, because notwithstanding the fact that in military practice the wounds are made by improved weapons and jacketed bullets of high velocity, they are, as a rule, made at long range while in civil practice they are usually made with unjacketed bullets, low velocity at short range. The range is the balancing factor.

Unless the surgeon is careful, his statistics of pistol shot wound of the skull and spine may be unintentionally misleading, because patients with pistol bullets in their skull and spine often not only leave the hospital in apparent health and resume their special business, they may still die in one or a few years later from the indirect effect of the bullet.

Among the causes which enhances mortality in these grave and serious wounds, and against which the surgeon must battle are infection, mylitis, encephalitis and meningitis with their sequela. Modern science, however, has strengthened the arm of the present day surgeon in civil practice, placing at his disposal the well equipped hospital, the x-ray, the aspirator for lumber puncture and the trephine with many other modern advantages. These with a better knowledge of pathology and technique, light the path that leads to greater achievment in brain, spinal cord and other surgery. The shadow of this light falls far back and darkens the careers of our unequipped but distinguished surgical ancestors.

(For discussion see p. 442.)

INTESTINAL HEMORRHAGE.*

Henry F. Kramer, M.D.

THE etiology of intestinal hemorrhage is so varied that it seems best to classify it for the purpose of describing treatment, as:

1. Acute hemorrhage.
2. Chronic bleeding.
3. Violent hemorrhage.

and to describe in detail only the treatment of the commoner forms of hemorrhage due to duodenal and jejunal ulcers, typhoid ulcers and ulcerative colitis. Acute hemorrhage from the intestine depends either upon an anatomical lesion as in the conditions just mentioned and also in bacillary dysentery, tuberculosis, syphilis, cancer, trauma, volvulus and intussusception, or is due to one of the hemorrhagic diseases in which the bleeding is variously ascribed to an insufficiency of the thromboplastic substances in the blood or tissues or to defects in the arterial walls. In this group are hemophilia, purpura, scurvy, pernicious anaemia, leukaemia, icterus, septicaemia, yellow fever, malarial poisoning, etc. In these the use of horse serum and human blood injected into the tissues, transfusion, and the use of coagulose by mouth and locally are sufficiently familiar. The thromboplastin of Hess (still experimental) is a tissue extract made from fresh human uterus or liver or brain of cattle. This tissue is obtained fresh from the slaughter house, washed thoroughly free from blood, ground up in a machine, extracted in salt solution in the refrigerator and then filtered. In its preparation, aseptic precautions are preserved as far as possible. The extract, which contains some fine suspension of tissue in addition to tissue juice, is made up with 0.3 per cent trikresol and preserved. In addition to the liquid preparation, a powder has been prepared. It undergoes autolysis, which then makes it of negative value, but it will keep a month with trikresol.

As a guide to treatment in these various conditions, the estimation of the coagulation time of the blood and plasma, the bleeding time, the number and size of platelets, the amount of antithrombin present, the capillary resistance test and the puncture test are valuable. The capillary resistance test consists simply of applying a tourniquet to the upper arm, tight enough to obstruct the return flow. Minute capillary hemorrhages will occur from the smaller capillaries in the purpuric conditions. The puncture test distinguishes hemophilia from the purpuras.

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* Read at the Society of Internal Medicine February, 1916.

In hemorrhage due to venous hyperaemia in diseases of the heart and lungs and in stasis of the portal system, treatment of the affected organ with a view to relieving the underlying cause, is necessary.

In hemorrhage from duodenal ulcer, absolute rest is desirable, with opium by rectum or morphine by hypodermic. No food should be given for twenty-four hours except 2 to 3 oz. of olive oil every two hours. A 5 per cent lactose or glucose solution is given in addition by Murphy-drip, using an inverted thermos bottle. This can be continued up to the point of stimulating peristalsis.

A solution of coagulose (P. D. & Co.) made by dissolving the powder contained in one vial in about 4 oz. of water at 99 degrees F. is given by mouth or, after six hours by duodenal tube, using in the latter case only about ½ oz. of sterile water for the solution. It is necessary to keep the solution at 99 degrees to avoid destruction of the enzyme, it being most active at this temperature. The duodenal tube method of administration is used with a similar intention of protecting the enzyme against the gastric juice. It should be injected slowly to avoid faintness and nausea. Hypodermic use of coagulose and horse serum I have not found effectual in bleeding ulcer.

On the second day, 2 or 3 oz. of a 10 per cent gelatine solution containing 15 gr. of calcium lactate to 8 oz. can be given alternately with the olive oil. After the third or fourth day, albumen water containing lactate or chloride of calcium, raw egg and gruel, can be added to the diet, still feeding every two hours, and gradually returning to the Lenhartz or Leube diet for ulcer. Coagulose by duodenal tube will often make the stools blood free in two days, and keep them so for from five days to a week, when it has to be repeated. Gelatin will often give the benzidin reaction for occult blood owing to the difficulty of purifying it at the time of manufacture. Iced food, ice cap and ice water irrigations stimulate peristalsis, so that in each individual case it has to be decided whether it is more important to avoid this than to obtain the local constricting effect.

Thirty-three to 38 per cent of duodenal ulcers bleed, and 13 to 33 per cent of hemorrhages from duodenal ulcer are fatal. Gastro-enterostomy increases the risk and therefore makes these bad cases for surgery.

In hemorrhage from typhoid ulcerations the treatment is similar as to diet, the use of gelatin and coagulose by mouth, and the hypodermic use of morphine. Ergot and similar constrictors are not used as much as formerly. Emetine hydrochloride 1-3 to ½ gr. hypodermically has been employed successfully by Josue and Belloir. Horse serum from 10 to 20 c.c. by deep injection and in one dose, to avoid anaphalaxis, has proven very valuable. Tremolieres solution consisting of a 10 per cent solution of gelatin containing calcium chloride 2 per cent or 15 gr. of calcium lactate can be given high into the rectum per colon tube, at 120 degrees F., 4 to 5 oz. The local use of Hess thromboplastin solution may prove valuable. Hypodermoclysis is indicated when there are symptoms of shock.

In dysentery and ulcerative colitis local treatment for hemorrhage is more efficient. Tremolieres solution or a solution of alum 1 dram to the pint of either hot (120°) or cold (40°) water, will often stop profuse bleeding. These can be given through a cecostomy or an appendacostomy opening. Ordinary 10 per cent gelatin injections containing 10 gtts. of trimethyl-methoxyphenol emulsion to the pint has given good results in ulcerative colitis.

Tuberculosis is primary in the intestines in about 1 to 4 per cent, usually in children. It begins usually in the caecum with hemorrhage often the first symptom. Secondary involvement is more common, occurring in 50 per cent. Peyers' patches in the ilium are involved and round ulcers of the colon are found. Treatment is surgical. Syphilis, like cancer, most often attacks the rectum. A hard fibrous narrowing with ulceration and hemorrhage late in the disease requires surgical and general treatment.

Vicarious menstruation from the bowel with hematemesis has been described without lesions of the stomach or intestine. Two cases under my observation with hematemesis and melaena came to operation and showed no lesions of the stomach and small intestine. One case had gall stones, and the other a cholecystitis.

Violent hemorrhage from the large vessels due to embolism of the mesenteric, rupture of varicose veins, aneurysm, strangulated hernia, etc. if not hopeless from the start, requires surgery.

Bleeding from hemorrhoids, if not controllable with the usual styptics and astringents, may require packing through a speculum with gauze dipped in percholoride of iron or adrenalin solution, or even require ligature of the vessels.

EDITORIAL

DEMENTIA POLIOMYELITICA.

AS one reviews the history of the recent epidemic of poliomyelitis a variety of angles present themselves, each worth consideration. Take, for instance, the question of health certificates. The conscientious citizen betakes him to the Health Department, and states that he wishes to travel. He is supplied with a blank on which he certifies that he comes from an uninfected house. He presents this to the local health officer at his destination. The local health authorities may receive him cordially or they may decide that if he comes from New York, he is a suspicious person in spite of his certificate and demand a quarantine of varying length. The method of certification is extremely lax, even for children. The cursory inspection of the child and the simple say so of the adult are totally inadequate for the purpose. The requirement that such a card must be obtained the day before leaving home has caused an unnecessary amount of trouble for thousands of individuals who have had no genuine return, either in the privileges obtained or the value of the guarantee, for numerous cases have developed in children who have been certified. Should such another emergency arise some better method must be devised, not only to carry real weight as a certificate, but also to economize effort for public and Health Department alike.

From numerous quarters there have come accusations that patients who did not have poliomyelitis have been hurried to isolation hospitals. Doubtless most of these statements have been made by laymen ignorant of the fact that paralysis is not the first apparent symptom, and may be absent. Then allowance must be made for reiteration of the same incident. But a most interesting side light on this aspect of the epidemic is furnished by a country practitioner of more than usual intelligence who, in speaking of his two cases, repeated his experience with the "Expert" sent by the Rockefeller Institute when the cases were reported. This man, so the doctor said, announced that gastro-intestinal symptoms coming on suddenly and without adequate ascertainable cause in young children were enough to base a positive diagnosis of poliomyelitis upon, and added that, in his estimation, cholera infantum is always due to polio infection! If this statement truly reflects the doctor's meaning, it is time to give serious consideration to the sort of material from which experts are selected. There is a tendency to pick for the purpose young men with a good laboratory training. It seems obvious that a broad clinical experience is essential in this field in addition to the special training. The idea conveyed to the doctor after his interview with the expert was that his conception of the practical problems of medical practice was so purely academic as to warp his judgment, make his advice of questionable value and discredit the splendid institution he represented. One practical result of his visit was to confirm the doubters of the community, who ended by saying, "Well, the Rockefeller chap said it was, but the child never had the right use of its legs anyhow. It was a lot of fuss to make over a simple case of rheumatism."

In certain sections local feeling ran so high that autos were regularly stopped, even on State highways, by men with red flags and in some cases those containing children were turned back — a most high-handed and lawless proceeding. Children who had been in strict quarantine for as long as ten weeks were refused admittance to other towns unless their parents bound themselves to a further period of from two to three weeks seclusion.

All these and many other extravagances indicate to what extremes panic terror may carry a community. When ignorance of the means of transmission is added, the result is sure to bring about excessive and unjust restrictions that are needless because they do not insure effective protection.

Then the surmises as to how the infection is carried are illuminating by their variety. It is a germ that is harbored in immune noses and throats. No, it is carried by milk. The mosquito is the deadly host. The rat flea has been accused. The house fly may do it. The caterpiller, brown tail moth, seven year locust and bed bug have not yet received public notice, so are respectfully suggested as candidates for suspicion. If concerted public effort can be brought to bear on all these unpopular pests much will be accomplished for the general comfort, even if they do not distribute poliomyelitis. Swat them first and acquit them afterward.

H. G. W.

FINE FOR FINE.

DR. FINE has moved to East New York. He has distributed a neat circular to his new neighbors containing ten good reasons why they should patronize him. He has not paid us for this advertisement, but he has supplied us with the text for some serious thoughts on the ethics of advertising.

If a man has ten good reasons why patients should go to him, why should he not announce them to his neighbors and prospective patients? Why should he hide his light under a bushel? It takes years of patient waiting for our virtues to become known and if we are not prepared to announce them to the world ourselves the world will be very slow to recognize them in us; indeed there are some modest people who never become known until their obituaries appear in the papers. On the other hand there are some physicians who have been able to place before the general public through the medium of the public press, but tactfully concealed in a well constructed reading notice, their pre-eminent ability to perform some difficult operation, or to recognize disease, or whatnot. Either method is calculated to place one's goods directly before the consumer — the merchant does it and why not the doctor? Those who have seen Anatole France's delicious comedy "The Dumb Wife" will recall the custom of other days when the Master of Physic was preceded through the streets by his apprentice who proclaimed his Master's many excellencies in resounding tones. And side by side with that picture they will place that old, old woodcut which shows the quack physician vending his curealls to an open-mouthed public. "It pays to advertise." Yes, it brings in more money for the time being, but we are slowly learning that the man who proclaims his own excellencies is not always the best judge of how excellent he is. That chapter of the Code of Ethics which deals with advertising is based upon the sound principle that most human beings are blind to their own imperfections and unable to place a true value upon themselves. Therefore the man who scatters handbills to his neighbors, as well as the one who obtains newspaper notoriety, opens himself to the censure of those who may know him better than he knows himself. It is quite natural to feel an inherent distrust of the man who advertises.

One suspects that his wares are below par — "good wine needs no bush." The capable physician will advance by virtue of his own ability and in proportion to his ability. The advertiser not only draws attention to himself but by his method casts discredit upon the profession to which he is attached. The profession of medicine is a learned art and those who are really learned are readily known. They do not need the town crier to proclaim their worth, and so the customs of 1550 have been discarded until to-day the well equipped physician realizes the folly of advertising; sooner or later it is bound to react upon himself and if he respects himself he will eventually awake to the shame that comes to a man who sees himself as he is seen.

H. G. W.

AN UNPRECEDENTED EVENT AND AN OPPORTUNITY.

THE candidacy of a physician for the Supreme Court bench in the Second Judicial District, comprising the counties of Kings, Queens, Nassau, Suffolk and Richmond, should arouse the especial interest of the local profession, regardless of partisan or other considerations.

The doctor's nomination for a Justiceship, unprecedented as such an honor is in this community, makes one regret that men who have assimilated the splendid heritage of the guild of Æsculapius so infrequently attain high civic office, for he who adds this to other qualifications for leadership is a much needed man in our complex social organization. In highly civilized France physicians so serve the State in great numbers, a service honorable and developmental to State and physician alike.

It seems to the writer that aside from the pride that we should feel in the elevation of a colleague there are practical reasons why it is desirable that men of medical training should be numbered among our civic servants in all grades. In the case of the law it is obvious that a man medically trained should be eminently qualified to adjudicate cases with a medical phase, which cases bulk large in litigation. But there is another reason which strikes us as noteworthy. To the degree that we are represented in the machinery of government, to that degree will our interests be safer. If we could be largely represented among those who participate in general governmental functions we should doubtless be less at the mercy of the doctrinaires and worse who are now notoriously preoccupied with plans for the degradation of the profession, not to speak of the menace of all sorts of freak practitioners, because such representation would add to government the intelligence which is all that is needed to bring the plans of these wreckers to naught.

Our clashes with the distinguished candidate before local tribunals, at which moments we are free to confess that we have felt the impulses of cave men and entertained feelings toward him not exactly affectionate, should not blind us to the fact that he stands now as the symbol of a vital principle which we should exert ourselves *dispassionately* to see in force—the principle of as many medical men as possible in public life.

Much of the bitterness of the aforesaid clashes has been due to the psychological and very human fact that we knew the man so well; the same crossing of swords with a stranger would have been a pleasurable and stimulating diversion, in which a tincture of humor would not have been lacking.

Another honor for the profession; and opportunity for further growth of the aspirant. Let both be consummated.

ARTHUR C. JACOBSON.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of this Society held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, on Thursday, March 2nd, 1916.

The President, ROGER DURHAM, M.D., in the Chair.

Program.

Report of Cases:

A. (1) Ovarian Cyst.
    (2) Compound Depressed Fracture of Skull. Patient.
    (3) Intestinal Obstruction.
Charles F. Stratmann, M.D.
B. (1) Ruptured Duodenal Ulcer. Three Cases.
    (2) Nephrectomy for Tuberculous Kidney. Two Cases.
    (3) Lane Kink Associated with Chronic Appendicitis. Two Cases.
Thomas M. Brennan, M.D.
C. (1) Cases Illustrating Errors in Diagnosis.
    (2) A Case of Hydronephrosis.
Warren L. Duffield, M.D.
Paper: "Some Phases of Pistol Shot Wounds in Civil Practice."
(See p. 423.) James C. Kennedy, M.D.
Discussion opened by Russell S. Fowler, M.D., Thomas B. Spence, M.D.

CASE I.

Ovarian Cyst.

C. F. Stratmann, M.D.

Aug. 14, 1914.

Miss R. T. Age 18. Born in U. S. Occupation, Dressmaker.

Family History: Negative.

Past History: Had an attack of Malaria four years ago; otherwise has never been sick up to present illness.

Present History: Menstruation began at age of thirteen — regular up to present time. About eighteen months ago abdomen began to get larger, and has kept on enlarging gradually until the present time, although she says the increase in abdominal size has been more rapid in last three months, so that she could not wear corsets. During the past three months her right leg has become swollen quite markedly; the left leg has also been swollen but only a very little.

Because of enlargement of abdomen, swelling of legs and shortness of breath, she had to stop work. Also has had attacks of sharp abdominal pains with vomiting of green fluid.

Has been under treatment for "Dropsy" and her physician advised tapping her abdomen, which she refused.

Examination: Small fairly well nourished girl whose normal weight is only ninety pounds. Heart and Lungs normal.

Abdomen: Symmetrically enlarged, with dilated veins all over it. Umbilicus protrudes. The intra abdominal pressure was so great that no definite mass could be felt, only a fluid wave could be palpated. Percussion note was uniformly flat.

Extremities showed edema particularly the right leg. Blood count was normal. Urine showed neither albumen, sugar or casts.

A diagnosis of Ovarian Cyst was made. Operation advised. Entered Norwegian Hospital, August 19, at which time Dr. Skelton confirmed the diagnosis.

Operation, August 21, 1914.

A Median Incision — peritoneal cavity opened, a large fluctuating pearly gray tumor presenting. This was aspirated and about nine quarts of a thick, gelatinous dark fluid withdrawn. The cyst extending from the bladder up to liver. The sigmoid flexure was adherent to the lower part of the cyst. This was separated and the raw edges brought together. Cyst was ligated close to the left fornix of uterus and removed. A small cyst about size of pigeon's egg was removed from the right ovary. A good portion of this ovary was in good condition and was left in pelvis. One piece of gauze was left in cavity for drainage. Wound closed with layer sutures. She stood operation well, pulse never going above 86.

Aug. 23. Two days after operation started to menstruate and was discharged from Hospital nineteen days after operation.

Patient was last seen by writer six months ago, feeling fine and in perfect health.

CASE II.

Case of Compound Depressed Fracture of Skull.

C. F. Stratmann, M.D.

H. S. Age 18. Brought to Norwegian Hospital December 8th, 1915, by ambulance, with a history of having been hit on the left side of head with a shell at an ammunition plant. He was unconscious when ambulance surgeon arrived, but came to when he reached the hospital, presenting the following symptoms:

He was in a somewhat dazed condition, could talk, but incoherently, although he knew what he wanted to say. He motioned for a paper and pencil wishing to write, but this he could not do legibly either, as the specimen of his writing very well demonstrated.

Examination: On the left side of skull about two and one-half inches above external auditory meatus and one and one-half inches anterior to it was a stellate shaped wound, which when probed revealed a depressed fracture of vault of skull. Face on right side showed paralysis.

Operation: Under ether anaesthesia the wound was enlarged dividing the muscle, pushing the periosteum aside. The opening in skull was enlarged making it about the size of a silver half-dollar. The depressed fragments were removed, one fragment had lacerated the dura and brain tissue. Several blood clots were removed from beneath the dura. One piece of iodoform gauze was put in wound for drainage; the wound was partly closed by layer sutures.

Patient ran a slight temperature, *i.e.*, up to 100 2/5 for four days and had to be catheterized for eight days. At the end of the second week after operation, the facial paralysis had practically cleared up and he could talk fairly well, although his writing did not become normal until three weeks after operation, as the specimen of writing, which I passed around, shows.

He was discharged January 14, 1916, as cured. The injury in this case can be definitely located as being in the second and third frontal convolutions of the brain, namely a disturbance in Broca's centre.

CASE III.

Intestinal Obstruction.

C. F. Stratmann, M.D.

Miss S. L. Age 24. Domestic. Brought to Norwegian Hospital on night of December 16th, 1915, complaining of pain in abdomen, more particularly in lower right side. The attack started one day ago with general cramplike pains all over abdomen which gradually settled down to appendicular region. Bowels moved on day of admission to hospital. No vomiting.

History: One year ago had a ventral suspension operation for retroflexion of uterus. Does not know if appendix was removed or not.

Examination: Temperature 98 2/5° F. Pulse 110. Respiration 26. Blood count shows 18,000 white blood cells. Urine negative. Heart and lungs negative.

Abdomen: Slightly distended. On the louer centre part of abdomen is a scar of her previous operation. Tenderness confined to lolrer right side, especially around McBurney's Point. Very slight muscular rigidity. No mass felt.

Operation: Right rectus incision, peritoneal cavity opened; about one pint of thin fluid removed with suction apparatus. An adhesion found formed by the right tube being adherent to anterior abdominal wall. This adhesion caused a loop of intestines about two feet in length to become twisted and pinched so that it was very dark color. When adhesion was relieved, color of intestines rapidly became normal. Appendix was not found; thought to have been removed at previous operation. Abdomen closed with layer sutures. No drainage.

Patient made an uneventful recovery. Discharged January 2, 1916, fifteen days after operation.

Compound Depressed Fracture of Skull. Patient.

Charles F. Stratmann, M.D.

Dr. Edwin H. Fiske, in opening the discussion, said:

"In regard to the case of compound depressed fracture of the skull, I would like to ask the reporter if there was any eye ground examination made. I have been particularly interested since reading an article by Starr, of New York, in the immense amount of benefit it has been to me to have the eye grounds examined in all head cases, both before and after operation, and I think, as Starr says, that the greatest guide for operating in the average depressed fracture, not such a case as this, but the average depressed fracture, is the eye ground examination, and evidences of intracranial pressure due to hemorrhage, no matter where it may be, and the watching for choked disk, clear up subsequent to decompression operations, and I would like to know whether that was done in this case or not because of the general interest that has been aroused in this question. It seems to be a uniform finding that even in cases where there may be a rompounding of the soft parts you may get symptoms of intracranial pressure, very marked in character."

Dr. Charles F. Stratmann, in closing the discussion, said:

"There was no examination made of the eye grounds because the symptoms appeared to be so definite and localized that we went right ahead with the operation the same afternoon."

Hydronephrosis Due to Aberrant Renal Vessels.

Warren L. Duffield, M.D.

J. C., a man of nineteen whose family and previous personal history are of no interest complained that for the past six years he had suffered with pain and tenderness in the region of the right kidney. The pain has been dull at first, increasing and remaining sometimes for two days, coming on under varying conditions of activity, never severe enough to demand morphine, but has been severe enough to cause vomiting. Bowels ordinarily normal in their action and have no reference to the pain neither does the injestion of food. No urinary disturbances at the times of attack.

Dr. Paul M. Pilcher kindly examined the patient for me and reported as follows: Cystoscopy reveals that there is no stricture of the urethra; that the left ureter opening is perfectly normal and admits a catheter without any obstruction; that there is some induration and inflammation of the base of the bladder near the right ureter opening, such as one sometimes finds in tuberculosis; that there is a spasm of the right ureter which, however, admits a No. 6 catheter when slowly advanced. Urine collects from the right kidney normally and contains many blood cells which may be traumatic, and contains a large number of granular renal epithelia.

Urine from the bladder was acid; 1018; contained no sugar, a trace of albumin, mucus, blood, large round cells, bladder epithelium and crystals. Urine from the kidney contained blood and granular kidney cells.

The x-ray of the first argentide specimen shows that the right ureter is very markedly kinked, forming a hair-pin curve opposite the pelvis of the right kidney. It then enters the pelvis abruptly.

The second picture shows an egg-shaped dilatation of the pelvis of the right kidney and confirms the first finding of a very distinct bend and angulation of the ureter high up. In this position, the usual cause is an aberrant blood vessel across which the ureter swings causing a dilatation of the pelvis of the kidney and renal colic.

Dr. Pilcher's findings were confirmed on February 16th when the kidney was exposed by a gridiron incision and an artery and vein found entering the lower pole of the kidney and looping the ureter up and causing a distinct "U" shaped angulation. The kidney was moderately enlarged and rather soft, the pelvis only slightly enlarged and no stone could be palpated. The vessels were ligated in two places after first establishing the fact that there was other blood supply to the kidney, the vessels sectioned and the ureter allowed to straighten which it did except for some light adhesions extending from the convexity of the curve to the renal pelvis. These adhesions were separated and as no plastic work seemed necessary upon the pelvis the wound was closed.

Cases Illustrating Errors in Diagnosis.

Warren L. Duffield, M.D.

On July 9th, 1914, I was asked to see Mrs. C., 36 years old, who gave the following history. She had been married three years but had never been pregnant. Her menstruation had always been regular, before marriage flowed for three or four days and since marriage has flowed for five or six days. Always slightly painful but not enough to prevent her from doing her work. Has always been slightly constipated and for the past three months has had to urinate frequently. In June her period was ten days early and in May it was six days late.

Six days ago, on July 3rd, she was awakened at 3 a. m. by a severe pain in the lower abdomen and pelvis which was relieved by morphine. She began to flow and this has continued. The following day the pain continued and an examination revealed a small uterus. She was again examined on the sixth and the uterus found enlarged.

I saw her six days after the onset of the symptoms and found a thin, frail, anaemic woman with a cervix small and held well back in the pelvis by a large, globular, tender mass occupying the entire right side of the pelvis. The left side of the pelvis was negative.

A diagnosis of a tubal pregnancy was made and it was thought that the tube had ruptured into the right broad ligament. Operation was advised and accepted.

Upon opening the abdomen a round, enlarged uterus was found occupying the right half of the pelvis and so firmly incarcerated beneath the promontory of the sacrum that it could only be dislodged with the greatest difficulty.

For the moment it was thought to be a pregnant uterus but this diagnosis was changed to that of a submucous fibroid and accordingly a hysterotomy was done and a fibroid about the size of a large orange removed from the uterine cavity. A satisfactory recovery ensued.

This woman's menstrual history had been practically normal until three months before onset of symptoms when the period had been six days late and the following month ten days early. She had never flowed more than six days at any period and there had never been any intermenstrual flow. Her flowing had never been excessive, in fact it had been rather scanty.

For three months she had frequent desire to urinate probably caused by the increasing size of the fibroid but why the sudden onset of severe pain at 3 a. m. requiring morphine for its relief?

On May 11th, 1915 I was asked by Dr. A. W. White to see Mr. W. A. A., a colored clergyman, sixty-two years of age, whom Dr. White had seen for the first time that morning.

His history is as follows: Eleven months before he had had a sudden severe pain over the region of the gall bladder radiating to the back on both the right and left sides. This attack lasted a few hours and was unaccompanied by any other symptoms. He had been moderately constipated for an indefinite number of years with a considerable increase during the last few months. Otherwise his history was absolutely negative.

On April 30th, eleven days before I saw him, and following a meal of sauer kraut he began to suffer with pain and discomfort over the right hypochondriac region. The pain was never severe but was constant. Jaundice quickly appeared and has been persistent. From the onset of his symptoms the bowels have not moved satisfactorily though there have been small movements, the result of cathartics and enemata. There have been intermittent attacks of colic radiating transversely across the upper abdomen.

Vomiting began ten days after the onset of symptoms and since then there has been an increasing tendency to expectorate a little watery mucus at frequent intervals. For two days hiccoughs have been constant and annoying.

He was a well developed rather fleshy man with an abdomen markedly distended but soft. No masses could be palpated. The liver was not enlarged and the lower border smooth. There was moderate tenderness over the gall bladder but it could not be palpated. Rectal examination was negative except that it was empty and dilated. Temperature normal and pulse 90 and not of good quality.

A diagnosis of stone in the common duct was made due to the profound jaundice and an additional diagnosis of probable carcinoma of the splenic flexure of the colon was made on the history of increasing constipation, inability to palpate any masses, persistent vomiting and empty and dilated rectum.

He was advised to enter St. Johns Hospital at once for operation but did not do so until some hours later and was accordingly operated upon about eighteen hours after I first saw him. During these intervening hours his condition changed rapidly, the vomiting became almost constant and in increasing quantities, the pulse more rapid and feeble so that at the time of operation his condition was very poor.

A vertical incision was made over the right upper rectus muscle and the pylorus found firmly bound to the under surface of the liver by dense, hard adhesions. These adhesions were separated and about ten large gall stones removed though the gall bladder was never definitely recognized. A drainage tube was quickly introduced and our attention turned to the stomach. An effort was made to deliver it but this was impossible, due to its enormous size and distension with fluid. It seemed to occupy at least half of the abdominal cavity. An effort was made to empty it with a stomach tube but this failed and as the posterior wall could not be made accessible for the purposes of a posterior gastroenterostomy a hurried attempt was made to do an anterior anastomosis but the patient suddenly died just as the first line of sutures had been applied.

As it seemed improbable that an autopsy could be obtained the gastroenterostomy wound was opened and enlarged and it was found that the entire forearm almost to the elbow could be introduced into the stomach.

The pyloris was occluded to a point which prevented the passage of even the little finger by a mass which completely encircled the opening and which was doubtless a carcinomatous infiltration of the gastric wall. A specimen was removed for examination but never reached the pathologist. The remainder of the abdomen was negative.

Here then was a man of considerable intelligence who was most careful in answering questions, who gave an absolutely clean bill of health except for the history as related and even though questioned carefully denied all gastric symptoms except two attacks of abdominal discomfort, both following meals of sauer kraut and who had a carcinoma of his pyloris which almost completely occluded the opening and a stomach larger than I ever thought a stomach could be.

My primary diagnosis of obstruction at the splenic flexure was made partially on the assumption that whatever obstruction existed must be rather low down in the intestinal canal due to the long persistence of the symptoms and their rather slight character except at the very last, when as a matter of fact the obstruction was about as high up as it could be.

E. B. Male, twenty-seven years old, was first seen by me at midnight on June 14th, 1915, and gave the following history. Four months ago, in March, 1915, he had been suddenly seized with exquisite pain in the left side of the abdomen radiating to the penis and was unable to urinate. This attack came on during the night without apparent cause but in the course of a few hours had so diminished that he was able to go to work during the latter part of the day.

During the night of June 13th, twenty-four hours before his admission to St. Johns Hospital, he was again seized with very severe pain in the left side of the abdomen opposite the umbilicus which radiated to the penis and was again unable to urinate. Enemata were administered without relief, he vomited several times and eventually obtained a few hours of comfort from a hypodermic of morphine.

He was a well developed man of excellent habits, good intelligence but extremely nervous and apprehensive and was bathed in perspiration from head to foot due to the severe pain from which he was suffering. His temperature was 102°, pulse 120, leucocyts 8400 and polymorphs 80 per cent. The abdomen was extremely rigid and scaphoid with a point of marked tenderness on the left side about where the ureter crosses the brim of the pelvis, though there was general abdominal tenderness. Hammer percussion elicited tenderness over both kidneys, equal on both sides. Rectal examination was painful but otherwise negative.

A specimen of urine was obtained by catheter and after being certifuged revealed four to six red cells to each sixth objective field.

Upon the above findings a diagnosis of left renal colic was made and as it was then about 2 a. m., he was ordered morphine and hot packs to the abdomen and renal regions with the intention of having x-ray and cystoscopic examinations made in the morning.

When seen again at 8 a. m., his condition had not changed and the pain was still very severe, Pulse 110, temperature 102°, but the leucocytes had increased to 8800 and the polymorphs to 86 per cent. Due to the persistence of his temperature and the increase in the differential count it was decided to open the abdomen which was done at once.

Upon opening the peritoneum cloudy serum escaped which upon culture was found to contain the colon bacillus. A non-perforated appendix covered with plastic lymph was removed from the right pelvis, a drain inserted and the wound closed. A satisfactory recovery ensued except for a sinus which did not heal until five weeks from time of operation.

This patient was referred to me by two physicians with the diagnosis of appendicitis, the history as above related was obtained by me personally from the patient and I saw the blood in the urine under the microscope so that the error in diagnosis can only be an error of judgment on my part.

Nephrectomy for Tuberculous Kidney. Two Cases. Patients.

Thomas M. Brennan, M.D.

Dr. Earl H. Mayne, in opening the discussion, said:

"I would like to ask the doctor if he had any difficulty with the silk ligature. I mean as to persisting sinus."

Dr. John D. Sullivan, in discussion, said:

"This case reminds me of the first nephrectomy I did. It was a good many years ago. I removed the kidney and ligated the stump with silk and there happened to be two renal arteries requiring a good many silk ligatures to stop the hemorrhage. The patient did well, very well, but the wound did not heal up for a long time. It finally healed up, but would break out every little while. I think a year or two after (I don't remember how long) the patient came back to me and I opened the sinus clear down to the bottom and found there several loose silk ligatures which were removed and then the wound bealed permanently. Since then I have been using chromicized catgut.

Paper: "Some Phases of Pistol Shot Wounds in Civil Practice."

James C. Kennedy, M.D.

(See p. 423.)

Dr. Russell S. Fowler, in opening the discussion, said:

"This has been a very interesting and illuminating paper. I cannot add anything to it except to say a few words about the different types of injury.

"In head wounds the brain injuries which I have seen from pistol shot wounds have been almost uniformly fatal and the autopsy has shown that it isn't so much the bullet itself that does the damage as it is the air or gas drawn in through it which, through its expansion, destroys the brain tissues. The danger in such cases is not increased by waiting, though, as the doctor has suggested, it is well to pursue radiographic studies of the case after it has recovered from its initial shock.

"I remember a very interesting case of injury to the lung through a pistol shot wound, in a boy fourteen or fifteen years of age, who was brought into the German Hospital a number of years ago. He had a rather large wound of entrance, from which there was a good deal of bleeding. In other wounds of that kind I had put on external pressure, hoping that by closing in the wound in this manner the accumulation of blood within the chest would act as a compress and stop the bleeding, but in this particular case the bleeding kept up and it was, therefore, deemed advisable to explore the chest. This was done and it was found that part of a rib had been driven into the lung and held there, or sprung there, and there was active bleeding from the lung itself, which could be demonstrated through an osteoplastic flap. The bleeding vessel was seized, tied, and the wound was then closed. The boy made an uneventful recovery. Here was a case of acute hemothorax which would probably have been fatal had we delayed operation.

"In this connection the difference between low and high velocity bullets is interesting. Low velocity bullets, as a rule, do not carry particles of clothing into the wound and, consequently, the danger of an early infective hemothorax is not so marked. With high velocity bullets, however, clothing is carried in, as well as pieces of skin, etc., and infection occurs early. This is shown in comparing the results in hemothorax cases in the Boer War and the war which is now going on. The statistics which were collected by Bradford and Elliott in the present war show that infection occurs early; that these cases die of immediate hemorrhage because the wounds which they are getting now are wounds caused by pieces of shrapnel shell for the most part, and a large wound of entrance results. If they do not die at once of hemorrhage they die later of sepsis, and this occurs early, whereas in the cases in the Boer War and in the cases which we see in civil practice it has been the experience that hemothorax infection occurs late. Of 328 cases observed there were 211 in which the wounds were small and in 89 of these were such large immediate hemorrhages as to need aspiration. The septic cases were 119 in number. Of these 47 died and of these 36 died of the sepsis itself. In all of the cases of hemorrhage met with, both large and small, 70 per cent died from sepsis, thus showing the enormous mortality from hemothorax in war surgery as compared with hemothorax in civil practice in smaller wounds. The causes of prolonged disability were either prolonged fever, dyspnea or partial collapse of the chest wall following as a distant result.

"In aspirating these hemothorax cases it is quite astonishing to note how quickly the blood clots in the chest. It does not remain in fluid form for very long and, moreover, one cannot tell from the physical signs whether a massive clot has formed or whether the clot is such that the serum lies on top, and for that reason in hemothorax aspiration should be high up in the chest, to allow for the expansion upward of the diaphragm and for the separation of the clot from the serum. It is probably advisable in all cases, in spite of the fact that we deal for the most part with low velocity bullet wounds, that aspiration be done early for the purpose of culture, and that further aspirations only be done in the presence of infection or after the hemorrhage has been known to be controlled.

"I recall a very interesting and unusual case, in which there was a pistol shot wound of a pregnant uterus. In that instance the only lesion to the mother was a perforation of the uterus and the only lesion to the child was a slight wound of one of the fingers. Cesarean section gave a living child and the mother made a good recovery."

Dr. Edwin H. Fiske, in discussion, said:

"I enjoyed the paper very much. It is a very complete study of the question from the civil side, but I would like to emphasize one point. I personally insist in all the gunshot wounds which I see on the use of tetanus antitoxin immediately or early after the entrance of the case into the hospital. That tetanus following gunshot wounds is certainly very rare there is no doubt, but unfortunately we had a case on our service some six years ago in the Kings County Hospital, of a bullet wound that was treated elsewhere and later on developed tetanus and came into our institution and died, and it seems to me that that point cannot be impressed too forcibly upon our minds. It is a thing which we are very liable to forget because around the Fourth of July we are all talking tetanus and yet it is the same powder that is used in the bullet and there is the same thing which we have to fear, and often, unless I watch my house men constantly, they neglect to follow such advice as that.

"The carrying in of foreign bodies by bullets is another thing with which I happen to have had an unfortunate experience and I know of a similar case which occurred in another institution. In our case there was an abdominal wound and in suturing several perforations, eight or ten perforations of the bowel, a bullet wound was found in the mesentery, from which there was bleeding. The bleeding was stopped and the bullet was not searched for. In a few days the man had apparently recovered, but then a sepsis developed which seemed unaccountable because the abdomen seemed all right, except for tenderness in the loin on both sides and in the back, and this extreme sepsis we were at a loss to account for. In that case it appears that the bullet was buried in the muscles about the kidney and in the kidney capsule itself, below the fold of the kidney, without any injury to the kidney, but it seems a piece of the man's underclothing, as was demonstrated by post mortem, was responsible for the sepsis from which he died. This piece of underclothing had infected the perirenal tissues and brought about the man's death.

"There is one other thing which I have been thinking about and which I presume is something which we have all been thinking about during the past year, and which is, to my mind, of sufficient importance to make it worthy of mention. It is only a civil question, but a question which I have been reading about in various meetings which have been held in this country at which the question of surgical preparedness in the case of war has been under discussion. How prepared are we to take care of the emergencies which we would meet with in the event of war. In thinking the matter over I have found in my own mind that I feel rather deficient as to what we who are in the institutions to which cases would be sent in case of war should do. Every institution would be at the call of the Government if such a contingency should arise, and it seems to me that the Brooklyn Surgical Society might take up this question at some time, not for my benefit alone, but to perhaps instruct us in some way or teach us how we can learn to take proper care of such cases, or have some one read a paper on this topic and have a discussion of the subject so that we won't be caught as some of the contestants in the present war were caught — absolutely unprepared. It is a subject which I am sure doesn't interest me alone, but one that interests all of us."

DR. WILLIAM B. BRINSMADE, in discussion, said:

"Along the line of Dr. Fiske's remarks I would like to make an announcement of the fact that the Long Island College Hospital has applied to the Government to have some one detailed to give a course in military surgery and that yesterday we received a reply from Washington, from a Major Ford, I think it is, who has been abroad for a year and has seen a great deal in the way of traumatic surgery — in the way of injuries taking place, and he is going to give a course of lectures to the senior students, and I have thought right along when we were arranging this course that it might be well, if the Society cares, to have its members attend these lectures and if so, I would be very glad to have accurate notices of the lectures sent to the members of the Brooklyn Surgical Society."

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SYMPOSIUM ON POLIOMYELITIS.*

THE CONTROL OF POLIOMYELITIS ON LONG ISLAND.

Frank Overton, M.D.,

Patchogue, N. Y.

THE evolution of infectious diseases has been supposed to be at an an end, but new phoses of old diseases are constantly arising to the annoyance and confusion of experts in Departments of Health. Long Island has recently been afflicted with hundreds of cases of septic sore throat and poliomyelitis—two old sporadic diseases which suddenly and unexpectedly assumed epidemic proportions and which have required a readjustment and enlargement of our medical ideas and methods of procedure.

The epidemic of poliomyelitis on Long Island began officially at Farmingdale, on July 1, 1916, when four cases were discovered. Three cases were found in Copiague on July 6th, and five in Glen Cove on July 8. Thereafter the cases developed so rapidly that one investigator could not keep track of the cases, or even visit the affected villages. Scarcely a hamlet escaped, but the smaller settlements suffered to a proportionately greater degree than the larger places, probably because of the lack of expert attention in the rural communities. The epidemic extended well into September. There were about 1,000 cases and 250 deaths in Nassau and Suffolk Counties. This is a tremendous toll of suffering and death, which reminds us of the pestilences of the Middle Ages rather than of modern public health conditions. It has been the worst epidemic of any kind that has ever afflicted Long Island, and its suppression has required an unheard-of degree of co-operation and effort among both medical men and the laity.

The official force in the field during the first three weeks of the epidemic consisted of the health officers of the affected villages and towns under the general direction of the State Sanitary Supervisor of the two counties. Three or four public-health nurses were added to the local forces early in the epidemic. Dr. Paul Brooks was transferred from his home Sanitary Supervisor district in Chenango county to Nassau county on July 24th, and Dr. Turrell of Smithtown was added to the staff about August 15th. A force of eight or ten diagnosticians was sent out by the State Department of Health about

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* Fifty-sixth Regular Meeting, held at Long Beach, Long Island, October 21, 1916.

August 12th. Four physicians were also employed on full time by the local municipalities, and about a dozen nurses were at work during the height of the epidemic. At least twenty-five trained experts were giving their full-time services during the latter half of August, but the number of special constables, deputy sheriffs and inspectors ran into the hundreds. The cost to the tax-payers of Long Island will be at least $100,00.

There are some who say that our efforts were of no avail, and that the disease burned itself out from lack of susceptible persons. A familiarity with the whole field convinces me that poliomyelitis is spread by contact of the well with the sick, just as scarlet fever is spread. We can actually trace the history of direct contact in a larger proportion of cases than we can in scarlet fever or diphtheria. Our suppression measures were founded on the idea of spread by contact. Where the greatest efforts were put forth, there the cases of disease were the fewest and the course of the epidemic was the shortest. On the contrary, where little or no effort was made to discover and control cases, as in the extremely rural districts, there the incidence of the disease was the greatest, and some of the most deplorable results were seen.

Much publicity has been made of the infection of rich children after great and prolonged efforts to protect them from contact with the disease germs. It is well to remember that the rich are dependent on dozens of other persons for every detail of their daily lives, and that their chances of infection by contact with infected persons and articles are thereby greater than the chances of the poor. One careless servant is all that is needed to undo the watchful care of a dozen skilled nurses.

The suppressive measures that were used may be classed under the heads of diagnosis, education, and quarantine.

Diagnosis. The first essential in controlling the epidemic was the prompt discovery of every case. Very few physicians on Long Island were prepared to diagnose a case unless a paralysis was so evident that the mothers themselves recognized the case. Dr. E. H. Bartley kindly spent three days visiting cases with me, and instructing me and the health officers and family physicians in the recognition of the disease. All through July we depended on clinical signs alone. The first spinal puncture that I saw done was one by Dr. George Draper on July 31st. On August 12th, the State Department of Health announced its plan for providing a corps of diagnosticians who would visit all doubtful cases at the call of health officers and private physicians. The epidemic reached its height during the middle week in August when the diagnosticians were making thirty or more spinal punctures daily. There was a rapid decline in the number of cases after the third week in August, and the epidemic was under control by the end of the first week in September.

The means of diagnosis were both clinical and laboratory. If a trace of paralysis was found, the case was considered to be positive and no spinal puncture was made, It was annoying to find how many physicians would dispute the existence of paralysis but would support the assertions of the parents that "the child always acted that way."

The two signs on which we came to rely on most were, first a typical fever, with a remission after the onset, followed by a return of fever; and second, retraction of the neck. If these two signs were present, we always found the spinal cell count above normal.

The laboratory diagnosis was made by a cell count of the spinal fluid. I regret that we were too busy to compile an accurate record of all the counts.

We became more and more proficient in diagnosis as the weeks went by. I think that we missed half of our cases during July. At the end of August, I think we recognized ninety per cent of the positive cases. This proportion is probably as great as we attain in diagnosing diphtheria and scarlet fever.

A few doctors persisted in calling mild cases of poliomyelitis by other names. In several municipalities the boards of health passed rules that every case of fever in a child should be reported to the health officer, and I believe that was a wise and necessary procedure, although some physicians felt humiliated by the rule.

A history of exposure to unrecognized cases was frequently found to be of great assistance, but people soon learned that it was not safe to talk, and many a mild case was deliberately concealed.

Education. The second measure of suppression was the education of physicians, health boards, and the laity. Conferences held in Riverhead and Mineola were attended by about eighty physicians. But the principal means of education was by personal interviews. Every effort was made to reach the doctors individually, and to instruct them in the essential points of diagnosis. Those physicians who attend medical society meetings profited at once by the instruction, but those physicians who do not associate with their fellows in scientific and social meetings, did not have the type of mind that would profit by instruction. They rather resented it as a reflection on their medical ability. Today there remain physicians who deny the existence of poliomyelitis, and upon them rests the principal burden of the continuance of the epidemic. In October, 1916, it would seem to be inexcusable for a doctor to fail to recognize a case of poliomyelitis which he has been treating for ten days, and yet this is still our experience.

Boards of Health generally felt their dependence upon their health officers for advice. Some boards refused to do much during July, but later all the boards adopted more stringent rules than were necessary. The time of the sanitary supervisor was occupied largely in conference with boards of health and with the individual members. The boards were urged by public opinion to do something spectacular. They did all that the health officers asked them to do, but they did not have the courage to refuse public opinion when it was contrary to what the health officers considered to be necessarry. However, good judgment is returning as the bills for audit come in for payment, and in the future the boards will undoubtedly profit by their education and experience.

The people in general were fed a medical pabulum by the daily newspapers. It would seem that the editors in general acted wisely, but this cannot be said of all the physicians whose effusions appeared in the papers. The idea that seemed uppermost in the minds of the people was that any adult was likely to be the carrier of poliomyelitis germs, and that no one knew much about the methods of transmitting the disease. We made every possible effort by lectures, articles, and private conferences, to instruct the people that we founded our suppressive measures on the prevention of personal contact of the sick with well persons; that personal contact explained the mode of infection in seventy-five per cent of the cases, and that the same measures that would suppress scarlet fever would suppress poliomyelitis. It was utterly misleading for the daily papers to say little or nothing about personal contact with tht sick, and to print columns about well carriers who account for only about a fifth of the cases at most.

Hundreds of thousands of circulars were printed and distributed by local boards of health, and dozens of pages of advertisements appeared in the weekly papers. A collection of these circulars and advertisements would afford amusement as well as instruction, but they had a great and lasting value, and will afford the amateurs who wrote many of them valuable experience which they can apply in future emergencies.

QUARANTINE. The central idea in the suppression of the epidemic was the isolation of the sick, and health officers pretty generally carried it out for a full six weeks. The great difficulty was in maintaining quarantine in mild cases; but after all the difficulty was no greater than it is in mild cases of scarlet fever or measles.

The need of isolation hospitals was realized by health officers early in the epidemic, but boards of health were slow to see the necessity of them, and their expense seemed greater than could be borne. But by the middle of August, the demand was heeded, and hospital facilities were then provided for practically every case. This simplified the work of the health officers and health boards, and was the wisest of all the new measures that were adopted. Eleven hospitals were established in Suffolk county in which about 160 patients were treated. Over 200 were treated in the hospitals of Nassau county. The parents of the children who entered the hospitals were almost unanimous in praise of the institutions, and the experience will probably lead to the establishment of a number of permanent hospitals for all contagious diseases.

The idea of the omnipresence of carriers of polioymelitis germs led to the demand that the measures of isolation should be extended to the families and relatives of the sick, regardless of their health. We public health specialists had supposed that the days of the old-fashioned, shotgun quarantine were ended years ago, but they were not as any one soon found out if he tried to pass from village to village on Long Island. Most of the summer people were in their homes when the epidemic broke out, and so there was a universal demand that all further influx of strangers should be prohibited. The regulations varied widely, and no one knew what to expect, but in spite of the inconsistency and cruelty of the methods, they had the desired result of keeping children at home and away from all probable sources of infections. I really do not see how the result could have been attained by any other method under the conditions of unpreparedness that prevailed last summer. A measure of preparedness that will probably be adopted in the future is that of legislation allowing a county to establish quarantines either of a whole county or of a district within a county.

LABORATORY DIAGNOSIS OF POLIOMYELITIS.

Phebe L. DuBois, M.D.,
New York City.

IT may be well to state at once that from the laboratory findings alone, only a probable diagnosis of poliomyelitis can be made during life. Even if a monkey inoculated with the washings from a nose and throat becomes paralyzed, without the history of the case, we cannot be sure that we are not dealing with a carrier rather than a true case. There is nothing comparable with finding the malarial parasite in chills and fever, trichinae in trichinasis, filaria in elephantiasis, the meningococcus in the spinal fluid in meningitis, etc. In poliomyelitis, the Laboratory is of value rather by what it excludes.

Of the various procedures that may be undertaken, the examination of the spinal fluid is by far the most important.

In the examination of the blood, the count, as a rule, shows a leucocytosis and a polynucleosis, but this is true of the majority of infections with which poliomyelitis may be confounded. So far complement fixation has not been successful. Probably it would be of little value in the preparalytic stage of paralytic cases because it does not seem possible that antibodies could develop before the paralysis, coming on as it does in most cases so quickly but it would be of aid in making sure of the non-paralytic cases. The method now in use to determine the presence or absence of antibodies is to mix an emulsion of the spinal cord containing the active virus with the serum to be tested and after it has stood for a while to inject it intracerebrally into a monkey. A control monkey receives the same quantity of the virus. Where antibodies are present the control monkey becomes infected and the other monkey remains free. This method is of course, too cumbersome, uncertain and expensive to be of practical value. No doubt, some one will evolve a simple method of determining these antibodies. Whether it will be by complement fixation as in syphilis, by agglutination as in typhoid, a skin reaction like the von Pirquet or by an entirely new method remains to be seen. As things stand at present, the examination of the blood is of little practical importance.

The examination of the urine too, is of no diagnostic aid so far as we know. At first, it is that of an acute fever, later it shows the end reactions of the products of muscle degeneration.

The spinal fluid is our real standby. It is clear or slightly hazy, comes out under increased pressure and is increased in amount. Of late, attention has been called to the so-called ground glass appearance as being diagnostic of poliomyelitis. Such an appearance is found in the fluids containing the larger number of cells. When the cells are fewer, I should hesitate to say from the microscopic appearance whether or not they are increased. Furthermore, this appearance is seen in many fluids of tuberculous meningitis, in the early purulent meningitides with slight cellular reaction and in normal fluid where there is a small amount of blood present, too small to give any color to the fluid. In view of these facts, the ground glass appearance as a method of making a tentative diagnosis at the bed side is fraught with many pitfalls.

A fibrin web frequently forms in a poliomyelitis fluid on standing. This was at one time considered diagnostic of tuberculous meningitis.

Microscopically, poliomyelitis fluids show an increase in cells, marked, moderate or slight. Though we have as yet had opportunity to follow up only a small number of the cases we saw it is my impression that the number of cells present in a fluid bears no direct relation to the outcome. I haven't tabulated the cases and so cannot speak authoritatively, but I think the meningeal type is apt to give more cells and many of these cases escape paralysis. It has been stated that early in the disease there is a preponderance of polymorphonuclears which were later replaced by mononuclears. In the large number of fluids that we have examined early, an excess of polynuclears has been found only very exceptionally. Many times, cells are so degenerated that it is difficult to classify them and this isn't necessarily because they have stood too long. Fresh fluids show the same condition. This uncertainty is probably one of the causes for the conflicting statements that one sees in print about them. There are also large so-called endothelioid cells that seem to us to be at least more numerous and more frequently found in poliomyelitis than in other conditions.

Kahn has been doing quantitative determinations on some of these fluids of total nitrogen, urea, nonprotein nitrogen, creatinin, creatin and sugar and has been finding traces of cholesterol. So far he has not discovered anything that helps in the diagnosis. When we come to work out each case, chemical findings, clinical findings and final results, these chemical findings may or may not be found to be of prognostic value. Meanwhile, the ones upon which we depend are a prompt reduction of Fehling's solution, a well-marked ring with nitric acid and a positive reaction with Noguchi's globulin test.

It must be borne in mind that the reaction both as regards chemistry and cytology differs greatly in varying cases. In the majority of cases it is well defined and in some few cases is very marked. At the other extreme lie a small number of cases in which the findings so nearly approach normal that it is difficult to say whether or not an inflammatory reaction exists.

We will now consider the things with which a poliomyelitis fluid may be confused. Very rarely in early cases of cerebrospinal meningitis, probably only within the first twelve hours, one may obtain a clear fluid from which meningococci, pneumococci or possibly other pyogenic organisms may be isloted. It is, however, very uncommon.

The chief things that have to be differentiated from poliomyelitis on the strength of a clear fluid increased in amount are tuberculous meningitis, svphilis of the central nervous system, especially acute syphilitic meningitis, and meningism. In a well established case of tuberculous meningitis, the amount of globulin and albumin in general is greater than in poliomyelitis. Also if Fehling's solution reduces slowly or not at all that points strongly to tuberculosis, but more than half of the tuberculous fluids do reduce fairly promptly. Of course, finding tubercle bacilli settles it and failing that animal inoculation; but the latter takes four weeks. It would seem that with the history, the examination of the child, lumbar puncture and the examination of the spinal fluid, it ought to be easy to distinguish between these two conditions, and ordinarily it is, but I was tripped up once this summer and I dare say others were. Lange's colloidal gold reaction finally gave me the clue to the diagnosis and since then, I've had an increasing respect for that procedure.

For those of you to whom it may be unfamiliar, a brief description may be interesting. It is a color reaction with gold chloride solution. This solution should be a brilliant red, orange or salmon red. The maximum reaction consists in complete decolorization. Numerical values have been assigned to this and to the shades between—a colorless reaction is designated by 5, pale or gray blue by 4—blue by 3, lilac or purple by 2, red blue by 1 and red by zero. Eleven tubes are placed in a rack and beginning with 1 c.c. of a 1:10 dilution of spinal fluid in salt solution the amount of spinal fluid decreases until the 10th tube has a dilution of 1:5120; the eleventh is the control. To each tube is added 5 c.c. of the colloidal gold solution. The final readings are made in 10 or 12 hours. In the so-called luetic reaction, the precipitate is usually greatest in the third to the fifth tube and never exceeds a 4. The so-called meningitic reaction has its maximum in the higher dilutions. In general paresis the first three to six tubes become colorless. In general in tuberculous meningitis, the maximum reaction is past the middle while in poliomyelitis it follows more closely the luetic type with its maximum before the middle.

Dr. Draper suggested the Lange to us and did many of the reactions for us and we feel very much indebted to him.

Of course, if there is blood in a fluid, that throws out the examination because of the albumin, globulin and cells thus introduced.

Our experience with syphilitic fluids has been rather limited. It was thought at first that possibly the products of degeneration present in poliomyelitis fluids might give a positive Wassermann, but repeated examinations have proved this to be a groundless fear.

By meningism I mean meningeal irritation, functional rather than organic, probably of toxic origin arising in the course of some disease, e. g., pneumonia, gastro-enteritis or the acute infectious diseases and accompanied by an increase of spinal fluid. Ordinarily, these fluids show no increase in cells and only the normal trace of albumin and globulin. There are a few exceptions to this, *e. g.*, the fluid in prolonged severe convulsions, in severe whooping cough and some times when a fluid is removed just prior to death.

The faintly cloudy fluid must be differentiated from that found in the spinal fluid of cerebrospinal meningitis caused by pyogenic organisms, by exclusion, *i. e.*, if the case is one of true meningitis, one should be able to demonstrate the organism in smear and culture. It is to be remembered that meningococci autolyze quickly and are sometimes quite difficult to find, especially if they are scarce, in a fluid twelve hours old.

Froin's syndrome is not characteristic of any one disease but does occur in poliomyelitis. It consists of a bright yellow fluid that coagulates spontaneously. It is due to an old hemorrhage and is so rare that it is only worth mentioning because so puzzling if one happens not to have heard of it. True hemorrhagic fluid, that is, where the blood is not due to accidental puncture of a vein is rarely seen, but does occur.

After two to three weeks the examination of the spinal fluid in poliomyelitis may not be satisfactory—the changes may be so slight that nothing definite can be said about the fluid. The increase in globulin and albumin usually persists longer than the increase in cells.

In conclusion, I wish to emphasize the fact that while the laboratory is of great aid in making the diagnosis of poliomyelitis, the laboratory findings must be closely correlated with the clinical study to be of value. When fluids are sent to the meningitis division by physicians, the only report we can make is a statement of the cytology and chemical findings with negative bacteriology, unless the fluid is contaminated, accompanied by the remark that the fluid shows evidence of an inflammatory reaction. When we see a case, however, we can nearly always make a positive diagnosis after we have examined the fluid if the case is one of poliomyelitis.

Since the beginning of the epidemic, we have examined somewhat over 1,100 poliomyelitis fluids at the Research Laboratory and Mr. Gerber, working under Dr. Neal's direction at the Kingston Avenue Hospital, has examined 670.

TONSILLECTOMIES IN POLIOMYELITIS.

A Preliminary Communication.

Joseph C. Roper, M.D.
New York City.

IN the course of investigating poliomyelitis at the New York Hospital during the recent epidemic the tonsils obtained at autopsy were found to contain from two to ten small foci of purulent material. From these foci an organism was isolated by Dr. E. C. Rosenow, injection of pure culture of which intravenously in sufficient quantity was followed by the development of paralysis in large animals, such as monkeys and in small animals such as guinea pigs. The latter had not been regarded previously as suitable for experimental work in this disease. A preliminary account of the bacteriological side of this work appeared in the *J. A. M. A.*, Vol. LXVII, No. 17, p. 1202. On the basis of these post-mortem and experimental findings it seemed desirable to investigate the tonsils during the course of the disease. Poliomyelitis in a majority of the cases runs a short course. In a fair-sized minority, however, after the acute symptoms have subsided, a condition often persists characterized by a slight daily fever, a fairly marked irritability and at times by the development of paralysis in parts not previously affected. In these cases the possibility exists that the process is being prolonged by a continual supply of infecting material from some focus. This view obtains some support from the fact that the virus as obtained from the cord is of low vitality. It is Dr. Rosenow's impression that the organisms live but a short time in the cord and that the process is kept up by a fresh supply. In our series of 115 cases there were fifteen deaths. Seven of these deaths occurred at least two weeks after the onset of the illness, several as late as the sixth week. The cases showing involvement of the chest muscles are usually those in which late deaths occur. It is our impression that this chest involvement increases in those sub-acute cases which show no distinct tendency to improvement after the acute symptoms have subsided.

As the foci observed post-mortem were situated at the base of the tonsil, tonsillectomy was necessary for proper study. The operation was performed on twelve patients. In several of the cases of this short series no change could be noticed as the result of the operation and no foci were found in the tonsils. In these cases, however, in which definite symptoms as outlined above were present at the time of operation a distinct improvement was noted within two or three days. In non-operative cases this improvement ordinarily developed only after the lapse of several weeks. In other words it seems possible that the removal of the foci produced more prompt improvement than when foci were overcome by the development of immunity.

In none of the cases were there any unfavorable developments. No operation was performed during the acute stage. In the case showing the most striking improvement the tonsils were removed on the twenty-first day of disease. They contained three foci. The day of disease in the other cases varied from the twenty-third to the thirty-eighth. It is our impression that some of the cases were distinctly benefited by the operation. The later course is now being observed and a careful comparison is being made between the operated and non-operated cases. A full report will be made.

PREVENTION AND CORRECTION OF DEFORMITY IN POLIOMYELITIS.*

Walter Truslow, M.D., F.A.S.C.

INFANTILE Paralysis is a disease which tends toward spontaneous recovery in a certain percentage of cases; toward death in a percentage which we would like to see lowered, but in the great majority of those who have been attacked, in a greater or less degree, toward muscular weakness, disability of the motor apparatus and intrinsically toward bodily deformity. It is a disease primarily of the central nervous system and would naturally come under the care of the neurologist; but because of its great tendency toward deformity and because thousands of cases with deformity (which should have been prevented) exist to-day, the patients drift into the hands of the physician orthopedically trained. Like all other physicians, the orthopedic surgeon holds ever before him the ideal of the prevention of the disabling effects of disease; but we know that it is often impossible to realize this ideal, and it has been peculiarly so in regard to poliomyelitis. Before the epidemic of this summer (1916), indeed long before the epidemic of 1907, our branch of the Profession was preaching prevention of paralytic deformity. But we were seldom privileged to get the cases before deformity had occurred, and were forced to devise methods to overcome the deformities which might have been prevented and then and thus to begin the delayed muscle development. The orthopedic surgeons may well feel proud of the brilliant operations and other means they have employed, including their large share in developing muscle training, to get the apparently hopelessly crippled paralytic upon his feet and into a social state of comparative usefulness.

But the medical and lay public has awakened to the now general slogan, which is; "Prevention of permanent disability." After the Vermont epidemic of 1914, the Board of Health of that State asked Dr. Lovett of Boston to supervise the after-care of their cases. Dr. Lovett was not able to start this until an average of six months after the majority of the cases were attacked and much valuable time was wasted. But he went about it in a most intelligent way, and by planning for proper bracing, by systematizing the muscle training and in obtaining the cordial co-operation of local physicians in a number of centers, he is able to report very marked improvement in disability and deformity prevention. In New York City and on Long Island, we may well feel proud of the new attitude which has made it possible to begin muscle conservation and deformity prevention at practically the outset of this summer's (1916) epidemic. When the scourge was scarcely a week old, Commissioner Emerson, of the New York City Department of Health, appointed orthopedic surgeons to look after this phase of the care of those cases which were quarantined by the hundreds at the great contagious disease hospitals. As Brooklyn had the first cases, the writer was able as early as late June to begin this work at the Kingston Avenue Hospital. The lessons of this Summer's experience have been instructive. The job was a tremendous one, and we have not been able to give the detailed care we could wish to all of 1,500 to 1,800, under our survey for a comparatively short time. But that much good was done may be attested by the daily observation of the clinicians in the after-care dispensaries, who find the average general condition of those patients who were detained in the city's hospitals considerably better than those who had been detained in their own homes.

What then are the principles of the after-care of infantile paralysis, how are they worked out and for how long should treatment be pursued?

The aims of the physician for his patient should be (1) conservation of muscle tone, beginning while the patient is in bed and continuing throughout the many months of the convalescent period; (2) prevention of muscle strain, to be begun as soon as any outside factor could act in a detrimental way, such as when bed clothes resting upon a drooping foot may begin to force the muscles away from their neutral anatomical position, or such as the body weight in sitting or standing; and (3) muscle development, to be begun as soon as muscle soreness (neuritis) has subsided. It is the writer's firm conviction that, whatever period of time future epidemiologists may decide is the proper one for quarantine against poliomyelitis, those interested in the patients stricken in the present epidemic will have reason to look back with gratitude that the ruling had been to keep so large a proportion of the cases at the quarantine hospitals for so long a time as eight weeks. For, while there, enforced horizontal position in bed, for a period much in excess of what would have been probable in the average home, has been the first great factor in the conservation of muscle tone and the prevention of muscle strain. Of mechanical means employed at Kingston Avenue Hospital (Brooklyn), the writer considers the most important to have been the covered soap boxes and covered bricks, placed at the patients' feet, to prevent foot drop and outward rotation of the hips, and the use of the Bradford frames, to evenly and symmetrically support the weakened back, respiratory, abdominal and neck muscles. Judicious use of plaster-of-paris leg dressings, especially posterior leg splints, with wooden transverse incorporated, to prevent outward rotation of hips, were very valuable. Especially in cases in which the sensory spasm would give deformity-producing muscle contractions, one to two weeks in complete plaster-of-paris dressing would bring great relief, and on its removal the spasm would usually be found to have ceased. One great and added use of this short time plaster dressing is the conservation of body heat secured by the cotton used inside the plaster.

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* Read at the meeting of the Associated Physicians of Long Island, October 21st, 1916.

In the eight weeks of quarantine, little resort was had to measuring for braces. All early deformity prevention is adequately and immediately attained by the plaster-of-paris splinting, whereas the necessities of crowding brace-shops would cause unwise delays and (of greater importance) by the time braces would be ready, much less support is likely to be needed than would perhaps be prognosticated at the time of a premature prescription. As soon, however, as the state of the patient is such as to indicate the residual weak muscles—the word paralysis is here purposely avoided—the careful use of braces is certainly indicated. The rules for brace use may be stated: (1) It should be of material as light as is consistant with the support intended; (2) it should be well padded against bony points and yet should be reasonably close fitting; (3) in growing children, its parts paralleling long bones should be extensible to meet body growth; (4) its mechanical joint activity (and this is very important) should be so planned as to supplement the activity of weak muscles and to prevent the deformity formation of the strong muscles which are complemental to the weak muscles; (5) It should be removed once daily for cleanliness, massage and muscle training. (Incidentally, when the joint mechanism is in conformity to the supplemental muscle activity just mentioned, the muscle development is carried out in the best way possible—Nature's way). Such a brace, so planned and so used, is of great aid in the prevention of muscle strain, in the development of muscle power and is an essential in the prevention of deformity. It will now readily be seen why the orthopedic surgeon speaks so strongly against the indiscrimate reference of a patient to the instrument maker, who seldom has the knowledge to determine the usefulness, as here outlined, of a brace, and whose merits should be judged by his skill in putting together the mechanical material which should be prescribed for him. When braces are thus used and when careful muscle development is co-ordinated, this artificial support is gradually curtailed, as joint-control after joint-control may gradually and safely be assumed by the patient's natural means—his own muscles. This last is not a theory—it is the actual every day experience of the orthopedist.

Massage and muscle training are not new procedures. Their development and increased application to infantile paralysis are more appreciated to-day than ever before. When all muscle soreness has ceased it is carefully started. Massage over the muscles affected must begin very lightly. Pummelling and heavy "kneading" may light up the neuritis again and cause much injury to the weakened muscles. Proper massage should warm up the skin and gradually effect the blood supply to the muscles. Muscle training is now so well described by Lovett,* as to make it unnecessary and inappropriate, at this time, to speak of it in detail. In the writer's opinion it is the most valuable aid we have in muscle development. It consists in daily carrying through the activities of the joints involved, to the full extent of their anatomical mobility; but with outside aid (assistive exercises), gradually supplemented by the patient's voluntary aid. By doing this daily for many weeks, the operator is rewarded by seeing this control increasingly assumed by the patient even to the point of overcoming much resistance given by the operator. When properly done, every motion is made in what the athlete calls "good form," which includes exactness and completion to the exercise. From the athlete we also borrow the expression "going stale" and we must, with these children, especially guard against fatigue. One frequently admonishes to "nurse the muscles tenderly back to power." Ideally a trained person—rather more than the ordinarily trained masseur—does this work, supervised by occasional visits of the physician in charge; practically, however, a mother if intelligent may be so instructed as to give this efficiently. For some years, it has been the writer's custom to give written exercise prescriptions, whether to the trained operator or to the mother, and to change the form when on succeeding visits he is enabled to record progress.

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* Robt. W. Lovett: The Treatment of Infantile Paralysis, 1915, P. Blakiston's Son & Co., Phila.

As a muscle developer, electricity has its ardent advocates. The writer believes that in truly skilled hands it is of value, but deprecates the indiscriminate use, in the homes, of batteries, with wet sponge applicators. The lack of anatomical knowledge of parents makes it impossible to pick out muscles involved; the undue training of the strong muscles, leading to contraction deformities, and the detrimental chilling and claminess of the skin which may follow, are strong contra-indications. Yet in skilled hands, and in conjunction with muscle training and massage it may be of use.

A very important procedure, in conserving muscle tone, is keeping the part always warm. The impaired circulation tends toward local chilling. We should instruct that much extra covering should be supplied. To a partially paralyzed leg two thick stockings are sometimes necessary in winter.

Such care as is here described is a big job. A parent needs constant encouragement. And we can honestly give it. One of the most trying experiences of the Doctor, who sees many of these cases, is the necessity to overcome the impression of hopelessness left on the minds of the parents because of the blunt (I might almost say cruel, certainly not intelligent) outlook presented by a previous practitioner; and one of the pleasantest experiences is the opportunity to change that outlook by a careful discussion of the case, and yet by an insistence upon the persistent and prolonged attention to detail.

The epidemic of poliomyelitis of 1916, has been characterized by its early onset in the summer, by the great number involved and by the early attention, on the part of the authorities and of the Profession, to the importance of planning for the prevention of disability and deformity. The cases are now largely back into our hands. Let us see to it that these children do not become deformed, and that the scourge may be noteworthy for the large percentage of useful citizens who will be glad, if necessary, to donate some "immune" blood.

CLINICAL EXPERIENCES WITH POLIOMYELITIS.

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SO much has been written in both the medical and lay press on the recent epidemic of poliomyelitis, that it is difficult to say anything new or fresh on the subject. Few if any of us have missed seeing cases the past summer, and although we may have been unprepared to make an early diagnosis last June, we have since then become quite familiar with such cases.

Most of the text books tell us that a diagnosis of poliomyelitis is impossible in the preparalytic stage, except by examination of the spinal fluid obtained by lumbar puncture. While this is true of sporadic cases and in some cases even in an epidemic, it is not quite a fair statement. Hundreds of cases of correct diagnosis have been made during the recent epidemic. Even when the profession was urged by the Department of Health to report all suspicious cases, from 60 to 80 per cent of the reported cases were correctly diagnosed as shown by subsequent lumbar puncture. Considering the fact that many cases which the physicians themselves regarded merely as suspicious, were reported, I believe it is safe to say that after the first few weeks of the epidemic at least 80 per cent of these diagnoses were correct. How many abortive cases were not diagnosed we shall never know. It is certain there were many.

In passing let me say that, in general, the medical profession are to be commended for their loyalty to the best interests of the community, by being willing to report these doubtful cases, and have their diagnoses reviewed by inspectors who could not be expected to make a more positive one, without the facilities of a bacteriologist.

I wish also to call attention to an incidental benefit of this epidemic in popularizing lumbar puncture as a diagnostic measure. We have had difficulty in the past in getting permission to use it. Let us now follow up our advantage and make more use of it in suitable cases.

Poliomyelitis is a contagious and infectious disease, the organism of which is filterable and gains entrance through the mucous membrane of the nose or throat and like the virus of rabies, tetanus, and epidemic meningitis has a selective affinity for the tissues of the central nervous system. It probably travels in by the lymphatics and at first attacks the vessels of the meninges and the lymphatics about them, causing cell infiltration, thickening and edema of the walls of these vessels and lymphatics. This infiltration and edema causes narrowing of the lumen of the vessels and anemia of the parts supplied by them. The irritation of the membrane leads to an increase of fluid in the subarachnoid space, with increased tension of this fluid.

In some cases the pathological changes are limited to the meninges and their vessels, producing fever and meningeal symptoms but no paralysis, or but a transient weakness. In severe cases the inflammation extends to the gray matter of the brain or cord producing changes with partial or even total destruction of these cells and loss of function. The edema here produces a much larger area of loss of function than that caused by destruction of cells; hence a part of the loss of function, or paralysis, rapidly recovers on absorption of the edema. The injury to the cells is variable in degree, and as there is always a natural tendency of such cells after injury by toxins to regenerate, the paralyses spontaneously recover in many cases and partially in all. The spontaneous improvement then depends partly on the removal of the edema in and about the inflammatory area, the relief of circulatory obstruction caused by the thickening of the walls of the vessels, and partly by the regeneration of the neurons in the gray matter of the cortex, or anterior horns of the cord, and also of some of the spinal ganglia.

In the severer cases the degeneration of at least some of the cells goes so far that they lose the power of regeneration. They then atrophy and disappear, and the loss of function is permanent. Or, the spinal ganglia may become the seat of the lesion and even the nerve leading to the muscles may degenerate; in either case the muscles controlled by these dead cells, ganglia, or nerves remain permanently paralyzed.

This brief statement of these chief points in the pathology of the disease may serve to help us to understand the symptoms and progress of the case in hand.

Bearing this in mind we see how the symptoms must vary with the tissues attacked, the location and extent of the lesion, the severity of the inflammatory process and amount of cell degeneration. We can readily see why many cases, especially in the early symptoms, resemble those of meningitis and why in those cases in which the pathology is limited to the meninges there is no paralysis, *i.e.,* they are what are termed abortive or rudimentary cases.

The onset of the symptoms is usually abrupt. The first and most constant symptom is fever. This usually reaches its height within a few hours and may reach 105 degrees F., or more commonly 102 degrees F. to 103 degrees F. The fever lasts from three to four days, or from two to seven or eight days, as extremes. The next most common symptom is stupor and in some cases excessive irritability, especially when aroused. The stupor in a few cases deepens into coma, and occasionally we have delirium. The next most frequent initial symptom is vomiting, sometimes projectile, but seldom often repeated. Muscular rigidity, especially of the neck muscles, and a positive Kernig's sign are frequent. Hypersensitiveness either local or general with tremor, exaggerated patella-tendon reflex and muscular twitching are frequently met in the early stages. A rapid pulse rate (120 to 140 per minute), is very frequent. Other symptoms, less constant, are headache, convulsions and diarrhoea. But constipation is the rule.

The paralysis, when it supervenes, may make its appearance at any time from the first to the ninth day of the disease, as determined by the fever. In a report recently made by Dr. Dubois in a study of 396 cases, 9 occurred on the first day, 67 on the second, 120 on the third, 79 on the fourth, 27 on the fifth, 12 on the sixth, 10 on the seventh day and only 1 on the eighth to ninth day. The paralysis does not appear abruptly, as a rule, but it is at first a mere weakness of the muscles, which gradually lose power for one to three days before reaching the height, and in many cases it is never complete. The weakness or paralysis may attack any group of muscles. Owing to the pressure of the edema above referred to large areas may temporarily be involved, a part of which recover as soon as the edema is absorbed, leaving the muscles as well as before. Usually there is left a certain amount of residual paralysis, the amount depending upon the number of neurons actually degenerated.

The following clinical groups or types of cases are spoken of in the usual discussions of this disease. The initial symptoms are very nearly the same in all these types:

1. The Cerebral Type; suggesting acute meningitis or polioencephalitis. The onset is sudden with high fever, vomiting and frequently convulsions. The paralysis, in paralytic cases, is of the spastic type and usually hemiplegic, resembling other forms of cerebral paralysis, and is apt to be permanent.

2. The abortive or ambulant type, or non-paralytic cases occur during epidemics with considerable frequency. These are cases exhibiting the usual early symptoms of the paralytic cases, including the changes in the spinal fluid, but without the succeeding paralysis, or they show only transient weakness of certain muscles, recovering in a few hours or days. Many of these cases are overlooked, unless lumbar puncture is done. Such cases have been shown to be as contagious as the paralytic forms.

In times of epidemic there are a considerable number of abortive cases; some writers stating that there are as many of the non-paralytic as of the paralytic form, or even as high as 60 to 70 per cent of all cases. Whether they occur as sporadic cases is not known, but probably they do. They are probably cases where the infection spends itself on the membranes of the cord or brain and which does not invade the gray matter of the cord at all.

3. The bulbo-spinal type associated with lesions of the medulla

and upper sections of the cord. The muscles affected in this type are those controlled by the cranial nerves, and therefore involve the muscles of the face, eye, throat, neck, palate and the muscles of respiration, *i.e.,* the intercostal muscles or diaphragm. The paralysis is usually unilateral, and many of these are fatal from paralysis of the muscles of respiration. In fact, most of the deaths occurring in this recent epidemic were from bulbar paralysis either primarily or from ascending paralysis involving this region. Broncho-pneumonia is said to be not unusual in this type.

Of the cases that have come under my observation none had broncho-pneumonia, but were cases of paralysis of the respiratory muscles, with accumulation of secretion in the bronchial tubes, resembling edema of the lungs rather than a pneumonic consolidation. My experience leads me to believe that pneumonia is rare, or at least very unusual.

Wickham estimated that in the epidemic he studied, this type constituted about 6 per cent of the cases. Without accurate figures to base an opinion upon, I think that in the recent epidemic the proportion of these cases was much higher than this, which accounts for the high mortality of about 22 to 25 per cent.

4. The Spinal Type. In this type the chief lesion is in the spinal cord, and spinal ganglia, with usually paralysis of one or more groups of muscles.

In all these types fever, vomiting, drowsiness, muscular twitchings or tremor are to be expected. In all of them the spinal fluid shows an early increased cell count, at first mostly polynuclears, and later lymphocytes, a positive reaction for globulin and an increased reduction of Fehling's solution. The fluid is usually clear to the naked eye (though occasionally opalescent), but in a strong light and with a hand lens it can be seen to be slightly cloudy, or, there can be seen in most positive fluids numerous small illuminated specks floating in the fluid.

It has recently been announced that immunization can be secured by bacterial vaccines, similar to the method employed in anti-typhoid vaccination. Since but three or four children in a thousand are susceptible, or contract the disease when exposed, it would be very desirable if a method similar to the Schick reaction could be found by which the susceptible cases can be discovered, and immunized, instead of attempting to immunize all children.

Still more desirable is a method of discovering carriers. Until this is done, the control of such epidemics as that of 1916 is impossible, for effective quarantine is impossible. Success in the control of these epidemics must come from some such methods of picking out susceptibles, and immunization of these, and some practical method of discovering carriers and the establishment of a quarantine based upon such methods. The present known methods of quarantine, as practiced the past summer, have been shown to be failures.

So far as statistics and the course of the epidemic in New York City show anything, they indicate that the measures adopted had no influence in checking the epidemic. It was affected by weather conditions, even during the height of the epidemic. A cool day or two was invariably followed by a drop in the number of cases reported and the number of deaths.

Absolute isolation in institutions, where all visitors were excluded early in the epidemic, seems to have been effectual in about

34,000 children. The spread of the disease has been usually by healthy adults or ambulant or unrecognized cases. Therefore, the only successful quarantine at present known is absolute isolation and that means complete arrest of all travel or personal communication. This is manifestly impossible in any community.

The attempts at quarantine practiced the past summer were so incomplete, especially in many country towns, so lacking in uniformity, so changeable and erratic (in one case coming under my notice changing three times in six weeks), that the public lost confidence in them. Hence the co-operation of the public was lost, because the regulations adopted by some of the local Boards of Health were unreasonable and such as could not be enforced.

The State Board of Health of our own State instead of early advising the local boards as to uniform and reasonable regulations, as they did later in the summer, left each one to work out its own plan.

In this the local boards were more or less influenced in their action by hysterical groups of citizens and lay committees more governed by panic than reason.

Under such conditions to speak of the *control of the epidemic* is a statement that admits of grave question. It is to be hoped that before another such epidemic appears in this country the Boards of Health will fix upon some uniform and settled policy in its management.

THE CLINICAL ASPECTS OF ACUTE POLIOMYELITIS.*

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IN a discussion of this most interesting topic of the day what concerns us chiefly as physicians is the diagnosis of the disease in its incipient stage. In order to prevent the rapid spread of an epidemic of poliomyelitis it is absolutely essential that all cases be recognized at their very onset, so that preventive measures may at once be instituted. Failing in this, and allowing many cases of the abortive, or mild type to go unrecognized and develop, a rapid dissemination is inevitable, as we have learned from the present epidemic. It will, therefore, be my purpose to discuss the various phases which mark the onset of this disease, the abortive type of Wickman, or as I prefer to call it, the rudimentary type of Muller.

We must think of this disease as an *acute systemic infection* involving, in the main, the cerebrospinal axis. It occurs predominantly in young children. In studying the pathology of this disease, we find that the symptomatology is very frequently much less than what we might expect from the concomitant extent of cerebro-spinal involvement. Extensive areas of perivascular infiltration, engorgement and edema of the membranes and cerebrospinal axis, may exist without clinical evidences of their localization. Since degeneration of the nerve tissue is secondary to the anteceding acute inflammatory condition, it necessarily follows that the stage of paralysis is preceded by a generalized irritation of the cerebrospinal system. This period of irritation, the *pre*paralytic stage, manifests itself clinically by such symptoms as headache, somnolence, irritability, hyperesthesia, general tenderness, rigidity of the neck, Kernig's phenomenon, Macewen's sign, altered reflexes, and mild muscular weakness.

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* Read before the Section on Pediatrics of the New York Academy of Medicine, October 12th, 1916, the Associated Physicians of Long Island and Williamsburgh Medical Society.

The symptoms of onset of poliomyelitis are those *common* to other *acute infectious diseases,* with a predominance of early nasopharyngeal and respiratory, or gastro-intestinal disturbances. We will take up these symptoms in turn and see how they differ in their characteristics from other diseases in which they may be present.

Fever.—The fever is moderately high, and remittent in type; the onset is sudden, yet without rigor. An oft noted peculiarity is the frequently observed drop that promptly follows a lumbar tap. A leukocytosis, which may be quite marked, running as high as 30,000 is usually present. This is at variance with the statement made by Muller of the Hessen-Nassau epidemic where he found the predominance of a leukopenia, 3,000 to 5,000 white cells, which he considered to be pathognomonic for poliomyelitis. Our observations, however, in cases where we had the opportunity of making counts, failed to verify this statement. On the contrary, we found a comparatively high leukocytosis, as stated, associated with a polynucleosis, which, however, was of no assistance in making a differential diagnosis.

The pulse is *rapid,* out of proportion to the temperature, and even in *meningitic* cases the pulse rate continues *high.* The respirations are somewhat increased, but never irregular, differentiating even the meningitic type of poliomyelitis from tubercular meningitis.

Gastrointestinal symptoms are marked. The onset is frequently accompanied by vomiting, not of a continuous, persistent type, bearing no relation to food, differing in this respect from the vomiting of acute gastroenteritis, which may follow dietetic indiscretion. Diarrhea is infrequent, while marked constipation is common. The abdomen is frequently distended, and while the children often complain of abdominal pain suggestive of an acute surgical abdomen, deep tenderness and rigidity are always absent. A local superficial hyperesthesia of the abdomen may occur and be misleading, but this can readily be differentiated from deep tenderness.

Retention of urine and distention of the bladder belong to the early symptoms. This, I believe, is caused by paresis of the abdominal and visceral muscles, due probably to an involvement of the ganglia of the sympathetic nervous system. This muscular paresis is not a permanent feature, and soon disappears.

Anorexia is the rule during the first days of the disease, but, in spite of the fever and the apparent progress of the infection, I have often been surprised by the demands of children for food. This return of appetite is welcomed by the mother who cannot correlate her observations with the increasing concern of the physician.

In several instances I have observed children attempting to wipe off an imaginary foreign substance from the tongue. This is, very likely, due to a peculiar hyperesthesia of the lingual mucous membrane as careful examination revealed no evidence of a local lesion, or glossitis.

Any portion of the respiratory tract may be involved. Rhinitis in my observation, has been less frequent than in previously reported epidemics. Pharyngitis, tonsillitis, and bronchitis commonly occur. The types of tonsilitis have varied from the acute catarrhal, to the follicular and even the pseudo-membranous varieties. The tonsillar manifestations were rather of a mild character and not associated with the intense hyperemia usually found in other throat infections, and were less frequently accompanied by adenitis. In the cases coming under my observation the lymph glands of the neck in but few instances showed pronounced enlargement. These throat symptoms were frequently considered as sufficient cause for the child's illness. In numerous instances the throat cleared up, the temperature dropped to normal, the child apparently improved and the physician in attendance no longer found it necessary to make any calls. A few days later, the child was again taken acutely ill with fever, and rapidly progressive paralysis ensued. Such recrudescences, or relapses, as Wickman calls them, were not common. There is no doubt but that the early symptoms were due to the same infection, but were not properly interpreted.

Bronchitis was frequently noted at the onset, and interpreted as an ordinary "cold"; but the continuance of the fever and the excessive amount of rales, suggested an extension of the catarrhal condition to the smaller bronchioles, and the case was then diagnosed as a bronchopneumonia. Instead, we were dealing with a paretic or paralytic condition of the intercostal muscles which prevented the child from expelling the mucus accumulations in the bronchi. The child was drowning in its own secretions, frequently erroneously interpreted as a pulmonary edema. These rales are of a very loud character, simulating pulmonary edema, and should be regarded as "paralytic" rales, if you will permit me the term. A closer observation reveals the fact that the type of respiration is entirely changed; that the abdomen of the child is bulging with every inspiration, and the burden is borne by the diaphragm, while the accessory muscles of respiration so often found overactive in dyspneic conditions, are not in action. The hand placed on the abdomen is constantly moved up and down with each respiratory phase, while the chest remains immobile.

Now as to the most significant phase of the symptomatology of the onset—the symptoms and signs referable to the cerebro-spinal axis. The child often lies in an apparent stupor, taking no interest in its surroundings; the eyes are closed; and yet, on the approach of the doctor, and attempted examination, the child becomes awake and alert and is extremely irritable, the intense drowsiness completely disappears and an opposite condition supervenes. A profound stupor, bordering on coma, I have seen only in the very severe cases of the encephalitic and meningitic types; however, somnolence was a pronounced feature in the greatest number of cases of all types. Mothers have been often apprehensive of this symptom, and because of it have frequently suggested the diagnosis. And though this was rapidly recognized by the laity as being of extreme diagnostic importance, yet it has been my observation, in consultation practice, that the average physician had not learned to lay sufficient stress upon this manifest symptom.

The general posture and attitude of the child is that of a hypotonicity of its musculature. I have often been impressed by the ease with which I could examine the throats of these children, a procedure which is vigorously objected to in the ordinary sick child. This lack of resistance was an early and suggestive sign, particularly notable because the child was able to move its extremities freely. A slight difference between the tonicity of the two limbs and a change in the tendon reflexes—a difference between the reflexs of th two sides—will often precede the more marked evidences of paralysis which accompany the spinal type. Absence of the patellar reflex is an early and almost pathognomonic sign; similarly, diminution in the tendo Achillis reflex. Skin reflexes, such as the plantar reflex, remain normal and may be exaggerated even in a paretic part and the child will draw up its limb even in states of weakness of the leg and thigh muscles. A localized weakness, which may be only of a few days' duration may attack any single group of muscles. The testing of the strength and tonicity of the muscles should not be limited to the extremities, but should include, as well, the muscles of the neck, the back and the abdominal wall. I have seen paralysis limited to but one-half of the abdominal wall and interpreted as ventral hernia, seemingly calling for surgical interference.

The apparent absence of paralysis, and evident ability of the child to use its extremities may prompt one carelessly to exclude the involvement of other muscles. In those cases where we suspect poliomyelitis, we should not fail to have the child sit up in bed when we can easily observe that it is not able to hold up its head, which falls over and flops from side to side owing to the lack of support of the hypotonic neck muscles; or again, if a child be taken out of bed, and made to stand on its feet and walk, a peculiar change of gait—an ataxic gait—is frequently noted, or the child may fall in a heap on the floor, the legs giving way. During the present epidemic I have observed quite a number of cases where the paralysis has been limited to the spinal muscles only, and where my diagnosis of poliomyelitis was not kindly accepted by my brother practitioners. These are the cases that later reach the orthopedist for the correction of spinal deformities. In the vast majority of cases these mild hypotonic and paretic conditions rapidly disappear, leaving no permanent paralysis; and this is the group of cases which belong to the abortive type; or, as Muller calls it, and justly so, the rudimentary type of poliomyelitis. In short, these cases run through the stage of onset, the *paretic,* and do not pass into the paralytic stage. The more closely one studies his cases, the more frequently will he recognize these types and it is my belief that the rudimentary far outnumber the paralytic cases of this disease. It will only be by prompt recognition of such cases that it will be possible for us to estimate the extent of an epidemic, because it must be evident even to the most skeptic, that hundreds of such cases go unrecognized and act as carriers of the infection. Pain in the extremities, and areas of hyperesthesia, general or localized, in any part of the body, very frequently occur and serve to demonstrate the widespread involvement of the nervous system. Careful pathological studies reveal involvement, not only of the anterior horns, but also of the white substance and of the posterior nerve roots, accounting thus for the focal sensory symptoms.

Very frequently, a slight inequality of the two sides of the face exists and is easily overlooked. There is a drooping of one corner of the mouth. A facial paralysis may be the only definite paralysis in evidence, and it may only be apparent when the child is disturbed and made to cry. The physician should not consider his examination complete until he has looked for this phenomenon. This points to an involvement of the pons. This may go no further in the mild type, or, on the other hand, symptoms of a rapid fulminating bulbar paralysis may ensue with dysphagia, anarthria, cardiac embarrassment and paralysis of respiration. Facial paralysis was prevalent in the present epidemic.

and when unassociated with other bulbar symptoms usually implied a very hopeful prognosis.

It may be well at this point to speak of the frequently noted alterations in the voice, giving rise to a whining cry, or even hoarseness which latter has occasionally been mistaken for croup, so marked as to lead to the suggestion of intubation, but which was merely a phase of the involvement of the vagal nucleus in the bulb, especially of those cells which innervate the laryngeal muscles.

Paralysis of the palate and tongue, usually unilateral, is evidenced usually in the more severe types. A severe bulbar syndrome need not, however, necessarily be fatal, for these symptoms may be but an evidence of edema and congestion of the bulb; and as such, therefore, rapidly disappear. It is only with more extensive destruction of these vital centers that the prognosis becomes hopeless. Death occurs in these cases usually as a result of involvement of the phrenic nerve and paralysis of the diaphragm and respiration.

Weakness of the ocular muscles, producing a temporary strabismus or ptosis, was less frequent and suggested a pontine involvement.

Generalized muscular twitchings of the arms, legs or face were observed in several instances in the earliest stage of the disease. They are observed when the child is awake or asleep, and recur at intervals of seconds or minutes, depending upon the toxicity of the disease. These peculiar twitchings have been frequently noticed by the mother and caused her well-grounded anxiety. They are an early manifestation, and helpful in the differential diagnosis. They are evidence of irritation of the central nervous system, and though apparently indicating a generalized involvement, may not lead to paralysis. I recall two instances where these twitchings dominated the clinical picture and both cases the disease ran a true abortive course.

The meningeal type truly belongs to the abortive or rudimentary group. In several instances the onset of the disease was marked with symptoms of meningeal irritation and the child presented a distinct picture of meningitis. Retraction of the head, some opisthotonos, a definite Kernig and a marked Macewen were in evidence. Macewen's sign was very common and was easily demonstrated, not only in the meningeal type, but also in other types I learned during the recent epidemic to lay great stress upon this clinical phenomenon. I was able to satisfy myself of its existence even in cases where there were no definite evidences of muscular involvment, or it was so slight that it made me doubt its existence. Macewen's sign should be tested for in every instance. Its presence points to an increased amount of cerebrospinal fluid as can readily be determined by lumbar puncture.

The meningeal types present considerable difficulty in diagnosis. They may be confused with a simple serous meningitis accompanying other infectious diseases or with meningitides due to other infective agents. In these cases lumbar puncture clinches the diagnosis. The findings in the cerebrospinal fluid in poliomyelitis are definite and pathogomonic. In the meningeal type lumbar puncture serves not only for diagnostic purposes, but has a positive curative value. Even one tap is sufficient to bring the temperature down and to relieve the symptoms.

If one would but think of poliomyelitis as an infectious disease attacking predominantly the cerebrospinal nervous system and that the symptoms of poliomyelitis are but the evidences of a pathology, mild or severe, of a greater or lesser portion of this system, one will more readily make the diagnosis. The errors of diagnosis are here the errors of omission; failure to consider the possibility of poliomyelitis in any and all obscure febrile diseases of children, and especially the failure to look for the mild evidences of weakness of one or more groups of muscles throughout the body. When doubt still persists, or in order to clinch a suspected diagnosis, lumbar puncture becomes imperative. The cerebrospinal fluid is well nigh characteristic, as has been shown by Draper, Peabody and Dochez of the Rockefeller Institute. The fluid is clear, under a moderate or high tension, shows a marked pleocytosis, especially of the lymphocytic elements, and a globulin increase, while Fehling's solution is reduced with a negative bacteriology. Occasionally in the very first hours of the disease a polynuclear increase is observed in the cell count.

Diagnostically, lumbar puncture is of special value in the early days of the disease. A definite cytology and a change in chemistry will differentiate this disease from the serous meningitis accompanying other infectious diseases.

The medical profession at large has been aroused to the importance of this infection—an infection which has killed thousands of children and maimed many more. Our efficient Department of Health put its complex machinery at work in an effort to check this terrible scourge. It was taken unaware and unprepared, and was constrained to rely upon medical men who had not had the opportunity of observing this infection; and furthermore, it was handicapped, frequently, in the failing cooperation of the general practitioner.

As the etiology of this disease is still uncertain, and as the transmissibility of the infection, shrouded in obscurity, is still a subject of debate; our efforts to eradicate or curtail the ravages of epidemics, like that of the present, will only be successful if the general practitioner, the family physician, will revise his old text book knowledge of the disease. It has only been through the achievements of the last decade, the epoch-making investigations of Wickman and Romer and our own Flexner and his associates, who shed the proper light upon the true nature of poliomyelitis, that we have augmented our nosology of this infection. We should realize the fact that this is an acute infection, and a general one; and, that it is not limited to the anterior horns of the spinal cord, and does not invariably lead to a definite paralysis. We should appreciate the fact that we may deal with different grades of the same infection, and the extent of the lesion will be in proportion to the severity of the infection; that mild cases recover without definite paralysis; and that the rudimentary cases represent fully fifty per cent of the total number, and may even exceed the number of "so-termed" positive cases. It is our prime duty to the community to recognize and promptly report these mild cases in order that vigorous preventive measures, proper isolation and quarantine may be enforced.

Discussion of Symposium on Poliomyelitis.

DR. Joseph C. Roper said: Dr. Rosenow isolated a peculiar polymorphous streptococcus, often in large numbers, from the throat, from material expressed from the tonsils, and from abscesses in tonsils of a large series of cases of epidemic poliomyelitis. It has been obtained from the ventricular fluid after death, and from the blood during life in one instance, but not from the spinal fluid. Paralysis with lesions in the central nervous system has been produced in guinea-pigs, rabbits, dogs, cats and monkeys by intravenous or intracerebral injection of this peculiar streptococcus from practically all of fifty-two cases of acute poliomyelitis. It has been produced by injecting emulsions of pus expressed from the tonsils, emulsions of extirpated tonsils, and emulsions of the brain. From the nervous system of these animals the streptococcus has been isolated in pure culture, while their other tissues were sterile; it is remarkably polymorphous and appears to grow large or small according to the medium in which it is grown, even after passage through a Berkfeld filter. Using the organism in its large form, paralysis has been constantly produced in animals known to be insusceptible to inoculation with material from epidemic poliomyelitis as heretofore practiced.

I am not a bacteriologist, but was interested in the clinical part of this work. We had at the New York Hospital 115 true cases of poliomyelitis with fifteen deaths and three complete autopsies. In three necropsies we had the cord and in one the cord and brain. Here I want to say just a word of commendation of the people and their willingness to help us in making observations. I refer to the attitude of the parents; they granted autopsies readily. In one instance the parents were Hebrews and did not know about granting an autopsy; they telephoned to the rabbi and he gave his permission.

In the treatment of our cases we emphasized rest, but did not treat them with either adrenalin or serum, but we did do lumbar punctures and we never had any ill effects from them. We gave a little bicarbonate of soda and bicarbonate irrigations, believing that these patients probably developed a slight acidosis.

Of the fifteen deaths seven occurred during the first week and five died during the third week; the remaining three died during the fourth, sixth and seventh weeks.

Owing to the finding of these foci of infection in the tonsils and their possible influence in prolonging the disease, it was decided that tonsillectomy was justifiable in certain patients in whom there was persistence for some weeks of fever, irritability, lack of appetite and little or no improvement in the paralysis, or in whom the paralysis was slowly extending. One would hesitate to perform a tonsillectomy on an acute case of poliomyelitis; the earliest one we did was on the twenty-first day of the disease. In this case the fever came down, the child's disposition changed markedly for the better, and there was a general improvement. In all about twelve cases were subjected to tonsillectomy, but in none of these cases were there signs of acute tonsillitis. None of the cases were made worse by the operation; most of them showed improvement soon after the operation, and in several the results were strikingly favorable.

Our cases of chest paralysis all died but one. This child had rales suggestive of pulmonary edema, but the condition was not that of pulmonary edema but a paralysis of the intercostal muscles.

Dr. Haven Emerson said: I have no paper this afternoon bebecause in the Department of Health we are preparing a monograph on poliomyelitis which will contain all the essential varieties of data which we have been able to accumulate concerning the disease and the recent epidemic.

By way of parenthesis, I might state that the contract for the digging of 3,700,000 feet of mosquito ditches in Jamaica Bay entered into in June last, has been completed; this may not have much effect on poliomyelitis, but it may limit the activities of other carriers.

The value of the spinal fluid tests from the standpoint of the Department of Health has been shown in several ways. It has been shown in the detection of cases in the early stage which later developed paralysis and in cases that did not develop paralysis while in the hospital but did later after they were sent home. In doubtful cases in which the spinal fluid was positive and which were kept under observation, the subsequent diagnosis justified this course. In cases in which the spinal fluid was negative and the patients were allowed to stay at home these patients at no time developed paralysis. In a number of instances where the effort was made to keep the children at home in defiance of the Health Department the courts had admitted the spinal fluid examinations as evidence in support of the clinical diagnosis. From the point of view of the Health Department the spinal fluid test has been of great value in avoiding taking cases from home that were not poliomyelitis and in getting preparalytic cases.

Errors in Diagnosis.—In some 9,000 odd cases there were 180 errors in diagnosis; a few cases of syphilis of the nervous system, syphilitic meningitis, or meningitis due to other diseases were diagnosed as poliomyelitis. Nineteen per cent of the cases were diagnosed in the preparalytic stage. There were forty autopsies performed in the hospitals of the Department and eighteen or nineteen in which the complete records are given and in which the organism described by Rosenow has been shown. We had 2,000 cases examined by a laryngologist. Of these forty-six had had the adenoids completely removed at some previous date. There were absolutely free, smooth throats in thirty-seven instances, and these made excellent recoveries; the rest did not do so well. Of the remainder, fifty per cent had abnormal throats and fifty per cent were normal. From these cases one cannot prove that the disease developed because of the condition in the tonsils. It is just as in cases of scarlet fever and diphtheria, where we find many cases with normal throats. The best pediatrists and laryngologists in the city advised a cessation of adenoid and tonsil operations at the outbreak of the epidemic, and furthermore the Department of Health advised the avoidance of sprays for the nose and throat. Dr. Rosenow's work may show that this advice was not well judged.

The death rate from poliomyelitis on Long Island, as Dr. Overton has stated was 25 per cent; for the State 21 per cent; for the City 26.7; in the hospitals of the Department 14.16 per cent; in 27 hospitals outside the Department 14.10 per cent; the death rate in homes was sixty-three per cent. This difference in the death rate between cases in hospitals and cases in homes does not mean that there is this difference between home and hospital treatment, but that many cases died so quickly after the onset that there was not time to remove them to a hospital, or they died so quickly that they were not reported until after death, or that they were so ill that it would have been both inhuman and unprofitable to have attempted to move them. These cases were essentially isolated because of their condition. I hope the word abortive will be given up. If a doctor goes into a family and says this is an abortive case of poliomyelitis, the parents do not understand it to be a true case and do not expect it to be isolated, yet these cases that are able to be up and about are the ones most likely to spread the disease. Therefore I wish we could get into the habit of considering poliomyelitis as a general infection, which may be classified as A, paralytic, and B, non-paralytic, just as we classify typhoid fever as "typhoid with hemorrhage from the bowels" and "typhoid with no hemorrhage from the bowels." It may be remembered that the old English name for poliomyelitis was "morning paralysis." At the Conference of Health Officers held in Washington last August someone suggested that only cases of paralysis be quarantined; that would not give any assistance in controlling an epidemic.

With reference to Kernig's sign, if the leg is flexed anteriorly we get a resistance, a sign due to pressure on a ganglion or around a nerve root. This is a useful sign, more so than fever and vomiting. Another useful sign is stiff neck; the child does not want to be disturbed. Usually a sick child wants to be comforted but the child ill with poliomyelitis does not wish to be handled. In the majority of cases the paralysis comes on early, but I have seen it come on as late as the sixteenth day. The committee appointed to consider the causes of death and their relation to mortality statistics and to submit a report for the revision of the International List of Causes of Death had entertained a motion to put poliomyelitis in the list of acute infectious diseases and to take it out of the department of nervous diseases.

Lumbar puncture is an invaluable therapeutic procedure. The Board of Health has treated many cases in this way and there has been an astonishing and immediate relief of symptoms. As a therapeutic measure it has given more brilliant results than any other single measure. Good results have been reported with the use of serum and adrenalin, but it must be remembered that each of these is preceded by lumbar puncture, and it may be worth considering whether the results attributed to these agents may not be due to the lumbar puncture rather than to the serum or adrenalin.

Recrudescences.—There are cases in which the slight initial symptoms subside and later there will be a sharp rise in temperature and an extension of the paralysis; there seems no question in these cases that the initial symptoms marked the onset of the disease.

In the Boroughs of New York we have had an interesting experience in the relative incidence of the disease. In the Boroughs in which there was the maximum hospitalization there was the minimum case incidence. In Richmond and Queens where the homes are more isolated there has been the maximum case incidence, three per thousand. In the Borough of Manhattan it was not one per cent. In many places the incidence was as high as four per thousand; this was true of New Rochelle and Dr. Overton had said there were as many as three or four per 100 population in some places on Long Island. I have found the same thing in reference to the attitude of physicians of which Dr. Overton has spoken. Where they were near an exact source of information and took advantage of it they learned rapidly to recognize mild and abortive cases. Some, however, would not recognize any case as one of poliomyelitis that did not show paralysis. One heard such diagnoses as malaria and neuritis following malaria. These physicians were behind the times and were not alert to take advantages of opportunities to learn the symptoms that would enable them to make a diagnosis.

The Health Department had spent $270,000 on the epidemic. There were about 9,000 cases, though as many as 16,000 cases were reported, that was about twice as many as were true cases of poliomyelitis, even though the diagnosticians of the Department were liberal in their diagnoses of poliomyelitis. Never were diseases so frankly reported by physicians at the expense of their pocketbooks. I wish the same thing would apply to whooping cough and that physicians would be as liberal in other diseases as they have been in poliomyelitis.

As Dr. Overton has said the disease may enter the families of the wealthy by way of the kitchen; there are ample contacts in the families of the wealthy. One careless servant can counteract the efforts of twelve trained nurses. The epidemic reached its height on the 6th of August and then continued to decline, with the exception of a few days when there was a slight increase in the number of cases, and yesterday no death from this disease was reported. I cannot uphold the shotgun quarantine as it only causes people to make numerous detours.

Of the first fifteen cases reported in the city, seven were in Brooklyn, four in Richmond and four in Manhattan; thus it appeared almost all over at the same time. There were a number of cases in Riverton last spring. There were 24,000 cases in the United States since June 1st; of these 18,000 occurred in New York and the adjoining states, New Jersey, Pennsylvania, Connecticut and Massachusetts. The disease spread widely and was not confined to small localities.

Whether or not the hospitalization of cases is a determining factor in the control of the disease it is justifiable from the clinical course of the cases. We cannot prove that it has controlled the epidemic but we are sure that the children who had hospital care had deformities avoided by the conjoined efforts of that great quartet, the pediatrist, the pathologist, the orthopedist and the neurologist. Sixty-six per cent of the cases were hospitalized for a period of eight weeks. In some instances the parents had requested that they be allowed to take the children a week ahead of time; in keeping the children for the entire time the hospital was protecting the interests of the child. In one instance a mother asked for her child, a girl thirteen years of age, and was allowed to take her. When the nurse followed up the case the mother said she did not know what was the matter with the girl, she used to wash the dishes and help but now she was not good for anything at all. Some of the children were neglected at home and it might have been necessary to have called on the Society for the Prevention of Cruelty to Children had it not been that the Committee for the After Care of Children Suffering from Poliomyelitis has formed. This Committee was not formed to steal patients from physicians, but was a plan for the cooperation of nurses, hospitals, dispensaries and surgeons to see that children received protection and proper treatment so that deformities might be prevented or corrected and the children enabled to take their place as useful citizens later on.

Dr. Houghton has asked about the possibility of an epidemic next year. Judging from past epidemics a repetition of the epidemic next year would be a very rare occurrence. The next year will more probably be like the previous year; we will probably not have more cases than we had last year, that was about ninety-five cases. We can hardly expect anything like the epidemic we have just passed through in the Eastern States next year.

Dr. Frederick C. Tilney said: As to the lessons we have learned during the epidemic—we have learned very little that is new about the disease, but much that is old about ourselves. In the first place the people were put in a panic as a result of unguarded publicity. In our efforts to solve the problems as to the manner of communicability we have advanced very little. While there is convincing evidence that the nose and throat of those suffering from the disease and healthy contacts harbor the virus of the disease we are not yet certain of the mode of its transmission. There is a suspicion that animals and insects may be carriers and also that it may be air borne or food borne. In the matter of diagnosis we have very uncertain criteria. For my part, I feel that almost too much reliance has been placed on the result of the spinal fluid examination. As to the cells, carbohydrates, and protein, we see these in a considerable number of fluids in other conditions.

In the matter of clinical management of cases, we have had the experience that out of 400 cases not a single one had a complete neurological or electrical examination. We have been finding that in Brooklyn this same thing is true. On the other hand, there is this vast clinical material which is all lost. In the domain of pathology and bacteriology there is the same defect. The management of material that comes to the laboratories is quite defective. The treatment leaves much to be desired. Serum in a few cases has seemed to be effective; the effect of adrenalin has been questionable. Cases treated by lumbar puncture have shown marked improvement almost immediately after the puncture. Regarding the after cure, any who attended the meeting at the Academy of Medicine in New York a week ago must have been struck by the great difference of opinion expressed, as to the way in which these cases should be handled in the paralytic stage. It has become necessary to call special meetings to consider the best ways of handling these cases. We have no well defined method of procedure and I would suggest that a commission be appointed which shall include the following committees: First, a committee to study the problems of epidemiology, quarantine and communicability; second, a committee on hospital management and diagnosis, which should include pediatricians, neurologists, and orthopedic surgeons, who should assemble all their records and keep careful data; third, a committee for pathological and serological investigation; and fourth, a committee which should establish the best lines of treatment, both in the acute stage and for the after care. I feel almost sure that such an epidemic as we have just experienced will occur again and we should be better prepared to meet such a situation than we were this time.

Dr. Jaques Rushmore said: I came down here horribly excited over the situation in regard to the after care of poliomyelitis but Dr. Truslow has allayed my feelings. If we follow his suggestions we will do well. The problem with which we are confronted is a new one and I want to exaggerate, as it were, certain features of his paper.

First as to the time when treatment should be begun—this should be the first minute muscle soreness has ceased. A second point I would emphasize is that of rest. A mother recently said to me "My little girl feels all right in the morning, but she feels tired in the afternoon." Fatigue should be avoided. A third point is to prevent atrophy of the muscles. Education is of great value, the idea of transmitting the message from the brain to paralyzed muscles over a different route than that ordinarily followed; this is where massage, heat, electricity and the maintenance of nutrition are useful. We must have something for the nerve to reach and act upon if it is to be regenerated.

As to deformities—in the cases under proper observation and receiving proper massage and muscle training deformities will not develop; a few deformities may occur early, but these are rare, and if they do occur may be overcome by proper care. With reference to plaster of paris and braces, if you want to get disuse put on braces and keep them there. You all know well that the way to get atrophy of any muscle is to cease using it. In our clinic braces were only used as a *derniere resort* and plaster casts as a last resort. If it was found necessary to use plaster casts they were removed at the end of two weeks.

I wish to say a word as to the Central Committee for the After Care of Poliomyelitis. It is not the purpose of this committee to take the patient from the physician but to see that no case of paralysis resulting from poliomyelitis goes untreated in New York City. Of course when one employs hundreds of nurses and other helpers it will happen that all are not of the highest efficiency and patients may be sent to clinics or dispensaries that may not be ideal, but we are interested in trying to get treatment for every case and our rule is work, work, work. If the patients are not helped or get but little improvement they are likely not to keep coming and it is a part of the work of this committee to encourage these patients to return and to persist in taking the treatment prescribed.

One word as to operative treatment; no case should undergo any operative treatment until two years have elapsed from the time of infection and in many it is better to wait three or four years before submitting them to operation.

Dr. Louis C. Ager said: Dr. Emerson has said some of the things I wanted to say. We must get away from the idea that poliomyelitis is a disease of the nervous system primarily and consider it essentially an acute general systemic infection of which paralysis is the most dramatic feature, but simply a casual symptom.

Dr. Roper spoke of the value of spinal puncture in the treatment of the acute stage of poliomyelitis and this has seemed to me a very satisfactory procedure. I stated in 1907 that this was a useful form of treatment. At the Kingston Avenue Hospital, where we treated 1,800 cases, we feel sure that spinal puncture is the essential treatment, though a few cases were treated with serum and other kinds of treatment.

I am not an epidemiologist, but when we remember the work done with other animals besides rabbits and take into consideration Romer's criticism that experiments on rabbits were not very convincing because the rabbit was an animal easily paralyzed it seems to me that Dr. Rosenow's and Dr. Wheeler's work which Dr. Roper has presented is very conclusive. I always thought that a bloody fluid meant puncture of a vein and I have made many punctures, but it seems that at the Rockefeller Institute in many autopsies they have found many extradural hemorrhages.

There is one symptom which I think was not spoken of, and that is sweating with high fever; this is a very important symptom.

Dr. B. Onuf said: There are a few points in regard to this subject that I would like to hear discussed in a few words; one is the question of the relation of climatological conditions to the epidemiology of the disease, and also the question "What has been the cause of this enormous epidemic, and how may later epidemics be prevented?" We have considered the host and the invading organism and we know too that there is a certain susceptibility in certain individuals which in other individuals does not exist; on the other hand there remains, as Dr. Emerson has said, a percentage of cases, as much as one per cent, who get the disease, indicating that there is something more than individual susceptibility. I would like to have these questions discussed.

Dr. Roper, in closing the discussion said: It is possible that a wrong impression may have been conveyed by what I have said. I did not mean to give the impression that infection was invariably through the tonsils. There were foci in the tonsils in the cases as we have recorded, but where they come from we do not know. We tried to get spontaneously paralyzed animals as did the Board of Health; the Society for the Prevention of Cruelty to Animals told us as late as the middle of August that they had not had a single paralyzed animal. Romer worked with rabbits and he produced paralysis easily in them, but it was very difficult to produce paralysis in the guinea-pig and it is a matter of great significance to have produced paralysis in animals hitherto not sensitive to inoculation with material from epidemic poliomyelitis.

THE AFTER CARE OF INFANTILE PARALYSIS FROM THE POINT OF VIEW OF THE MEDICAL PRACTITIONER.*

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YOU will note that this title differs from that on the program as it appears to cover more accurately the problems which I wish to present.

By after care is meant the treatment of those children who have acquired a greater or less degree of paralysis and possibly deformity as a result of this infection. According to the orthopaedic surgeons the after care is that which is employed when the acute stage is past; and the acute stage is defined as the period during which pain and tenderness exist. It is generally conceded that any form of active treatment is dangerous and probably harmful as long as any tenderness is present. This acute period is exceedingly variable, but in a large majority of cases it does not last more than four weeks and in a considerable percentage but two weeks.

Even during the acute stage something may be done to prevent deformities by keeping the limbs and back in a fairly normal position by support; and by counteracting the effect of gravity and the weight of clothing. Nevertheless, at this stage damage may be done by forcible or painful retention of the body in uncomfortable attitudes. Careful observation has convinced me that better end results are obtained by permitting considerable flexion of knees, thighs and back in cases in which marked tenderness is present, than by retaining the body in an uncomfortable attitude. In other words the greatest amount of rest is secured to the inflamed areas by maintaining every muscle in as comfortable a position as possible by the support of pillows, cushions and pads, regardless of the attitude that may be assumed.

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* Read before the East New York Medical Society, October 19, 1916.

If a careful study is made of the teachings of the different orthopaedic schools it will be found that there is considerable difference of opinion as to the relative value of massage, electricity, plaster and braces. The tendency at present appears to be to employ massage and electricity to a much greater degree than ever before. This is due to the popularity of Dr. Lovett and his followers and as I am not skilled in orthopaedic work I will not venture to express an opinion as to the relative value of the different lines of treatment. Nevertheless I am under the impression that the orthopaedic work done in New York has given as good results as that done elsewhere. However, we all know what the after treatment is intended to accomplish and we must think for ourselves in drawing conclusions as to the best methods to secure the desired results.

At the end of the acute stage we are confronted with a certain amount of destruction, by hemorrhage and inflammatory action, of central nerve areas, most of them located in the motor portion of the spinal cord. Surrounding these areas in which actual destruction has taken place there are large areas in which temporary injury has been inflicted by edema and pressure. The areas which have been only slightly damaged return rapidly to a normal state if not interfered with. So long as nutrition is maintained by proper food, sunlight and elimination, the improvement will be marked unless injurious treatment is given, as is undoubtedly the case in many instances.

As a result of the actual destruction of nerve centers the so-called residual paralyses occur with the marked wasting and deformities which used to be considered inevitable. Thanks to the orthopaedic surgeons these effects of the disease are also being prevented or corrected to a greater degree every year; but this work requires the most skillful training and the long continued cooperation of parents and family physicians. Briefly, we aim by intelligent treatment to assist the body in every way possible in its wonderful powers of regeneration, and at the same time to prevent the harmful results of the damage that has been done.

Passing from theory to fact, what is the exact problem to be met in Brooklyn? Some of the statistics bearing upon this are as follows:

The Committee on After Care finds that about four thousand cases have already been discharged from quarantine. They have fairly accurate statistics in regard to 3,400 of these. Five hundred have no appreciable paralysis on discharge. Two thousand were so paralyzed in one or both legs as to be unable to walk. About 600 are partially paralyzed in the legs, but able to walk. Two hundred and seventy-five have paralysis of the upper extremities. According to the Bulletin of the Department of Health there had occurred up to October 3d about 2,500 cases in Manhattan and about 4,500 in Brooklyn. We may therefor assume, roughly speaking, that there are in Brooklyn already needing orthopaedic attention over 2,000 patients.

This is an enormous problem for the medical profession as a whole and the general practitioner and the orthopaedic surgeons should get together in an honest effort to determine how much of the work can be done with reasonably good results by those men who have not had special orthopaedic training and how much of it must be supervised by those especially skilled.

It is unfortunately true that there are a few men practising medicine who are willing to accept fees for attending children without giving any adequate return, but there is a very much larger number of physicians who, from a mistaken conscientiousness, are turning their patients over to masseurs of varying degrees of ability instead of giving them the medical supervision that they ought to receive. I am sure that orthopaedic surgeons will admit that they can cooperate with general practitioners and get very excellent results in that way. For example: A child of three that I had seen in the first two days of its illness in consultation was brought into my office three days ago with moderate paralysis of the left leg and left arm and the mother stated that he could walk and play around all day, but that he was listless and tired and his appetite was not very good. I found that the family physician had not seen him for the past five weeks as he said it was not necessary. He had sent a masseur who was giving the child an hour and a half treatment three times a week. I instructed the mother to cut the treatment to twenty minutes for the present and to take the child off his feet for a very considerable extent of time and to report to her family physician regularly once a week for further instruction.

Probably a large majority of patients requiring treatment will have to be taken care of in the dispensaries for financial reasons. A very small group are so financially situated as to be able to secure the best orthopaedic attention. The size of the intermediate group, which is able to pay for a certain amount of treatment, is problematical, and much depends upon the way in which this problem is met.

Institutions can secure skilled operators in massage and muscle training at the rate of $75 a month for three hours work a day. If groups of physicians would cooperate in some way with the distinct understanding that they guarantee the inability of the patients to pay more, it is probable that they could have their poorer patients taken care of at the same rates. If the general practitioners will take time to familiarize themselves with the most recent theories in regard to massage, electricity and muscle training, the same group could undoubtedly secure the cooperation of the orthopaedic surgeons for occasional advice and treatment of their poor patients at a cost which would sufficiently recompense the specialists for their time and which would prevent the medical pauperization of large groups of self-respecting citizens. Furthermore this would leave the dispensaries free to care for the immense group of patients who cannot receive adequate attention in any other way.

As president of the Board of Managers of the new dispensary on Throop Avenue, I fully realize the difficulties of the problem both from the dispensary and the private physician's point of view, and shall be glad to cooperate in every way possible in its proper solution.

TREATMENT OF PARALYSIS FOLLOWING ACUTE POLIOMYELITIS.*

John Joseph Nutt, M.D.

IN this paper we shall discuss treatment commencing the thirty-fifth day of the disease. At this time pain and stiffness have disappeared in the great majority of cases. A tentative prognosis can now be made as to which muscles will regain power within a few weeks and which ones will be paralyzed for a longer period. A paralyzed muscle which is going to recover in a short time will give a distinctive sensation to the palpating finger. Furthermore the tendon of such a muscle may be felt to taughten when voluntary attempts are made at contraction. This tendon-tightening can be obtained long before any movement can be seen even under the most favorable conditions as to gravity and friction.

This then is the time, about the end of the fifth week, to design the ambulatory brace if such a brace seems feasible. Any patient who can sit up without support can be fitted with braces which will enable him to stand and probably walk to some extent. If the patient is unable to sit up without assistance it is a much more difficult problem to fit an ambulatory brace but it can be done and will at least save the patient from becoming bed-ridden. It is usually not desirable to fit braces under eighteen months of age.

After the braces are applied improvement may make it possible to shorten them or even to remove them altogether within a few weeks. This possibility is greatly increased, I believe, by having the patient up and about by the sixth or seventh week.

The object of the brace is to permit functionating of all the tissues which are not paralyzed, bone, ligament, vessel and nerve as well as muscle, while at the same time it protects all of those tissues which are weak or paralyzed.

The brace is not designed to produce immobilization nor to prevent deformity. It is designed to allow all possible movements and to prevent tissue strain. In preventing tissue strain it does prevent deformity but tissue strain if permitted will produce loss of function before deformity has become fixed.

If the only function restored by a brace is that of weight-bearing to the bones, it will be of such value as to be well worth while. However, weight-bearing exercises the muscles having to do with balance, especially the small pelvic-trochanteric muscles.

The exercise of a physiologic function we know to be the best way of developing that function. No matter how weak the contraction of a muscle may be if it is excited by a central impulse beneficial results follow. On the other hand we do not know that any real, direct benefit follows an electrically excited contraction. Exhaustion of these weak muscles is detrimental and Nature is a far safer guide to its prevention than can be any arbitrary strength of an electrical current for any arbitrary number of contractions or number of seconds. Furthermore can any one cause contraction of the gemelli or the obturators with a safe strength of current?

If a brace is without joints it will immobilize the part and have to meet the same objections as plaster-of-paris except that it is easier to remove for baths, manipulations and hygienic attention to the skin. In some conditions as that of a paralyzed quadriceps femoris with normal hamstrings no movement can be permitted at the knee in standing or walking, yet a lock-joint allowing the knee to be bent when sitting promotes the healthiness of all the joint structures. At the ankle an absolutely stiff joint is never desirable. If the peronei or the tibialis anticus or posticus are paralyzed the joint of the brace may be free as any lateral deviation of the foot in walking will be impossible. If the anterior tibial muscles are weak or paralyzed a stop should be inserted in the joint of the brace to prevent plantar flexion of the foot beyond a right-angle. (Fig. 1.) If the posterior tibial muscles are gone and the anterior ones are normal then a stop should be made to prevent dorsal flexion of the foot beyond a right angle with the leg. (Fig. 2.) If there is absence of power in both the anterior and posterior groups of muscle then the motion at the ankle should be limited to an arc of six degrees. (Fig. 3 and Fig. 4.) This will prevent any strain and yet will afford enough movement to stimulate the structures about the ankle and at the same time will make walking a great deal easier than can be done with a stiff joint. If the anterior tibial muscles are paralyzed the brace will have to be worn at night—or other means taken to hold the foot at a right angle to the leg while the patient is in bed.

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* Read before the Brooklyn Medical Society, October 20, 1916.

When the internal rotators of the hip are paralyzed a pelvic band controlling the leg through a foot plate will have to be worn to prevent external rotation.

In making a brace care must be taken that the steel is not too heavy or the brace will be cumbersome and it must not be so light that it will be continuously breaking.

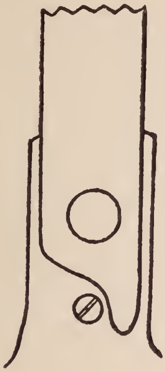

Fig. 1

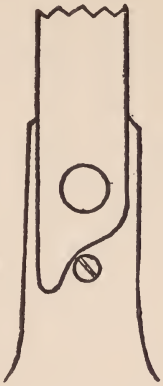

Fig. 2

The three criticisms which may most frequently be made of braces are: the uprights are not fitted to lie close to the leg but stand awav a distance of a half an inch or even an inch; the uprights are not in the transverse plane of weight-bearing, the usual fault is that the uprights are too far forward; and the last, but equally important, criticism, is that the joint of the brace is not within the arc of motion of the articulation.

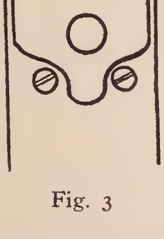

Fig. 3

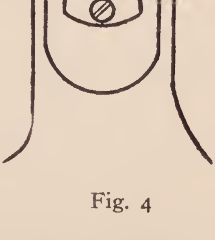

Fig. 4

The axis of movement in an apparatus should be so situated with reference to the anatomical joint that movement will not cause interarticular pressure. In long leg braces, for instance, having a pelvic band with anterior-posterior motion, many surgeons place the joint of the brace an inch or more below the pelvic band thus attempting to aline the axis of the joint with that of the hip in pure extension and flexion. Such an exact alinement is impossible and if the axis of the steel joint should fall ever so little below the anatomical axis the brace would be injurious and its use difficult. On the other hand if the joint is placed at or above the hip-band, the longer radius of movement gives a cord as represented by the length of step, equal to the lower joint with less brace movement and with no danger of interarticular pressure. In other words, the distance of movement as represented by the foot step 7-8 (Fig. 5), is the same in any case but the longer the radius of movement, 1-7 in comparison to 2-7 the less will the radius approach the horizontal diameters, 3-4 and 5-6, respectively in which upward and downward movements are the most pronounced and interarticular pressure the greatest.

The ankle joint seems to be a most confusing one, judging from the variety of positions in which the corresponding joint is placed in apparatuses. The axis of movement does not pass through the articulation but below it and almost through the calcaneo-astragaloid articulation. It is about opposite the tip of the external malleolus, A-B (Fig. 6). If joint of the brace is placed above the anatomical axis, as in (Fig. 7) B, where the axis is at X, any movement of the brace will be exactly opposite to the line of movement in the joint. Therefore, the position for the axis of motion in the ankle joint of a brace should be between the tip of the external malleolus and the bottom of the foot, as in A (Fig. 7).

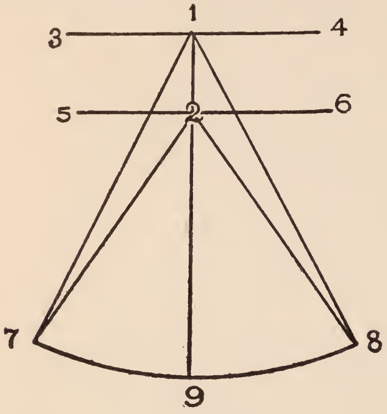

Fig. 5

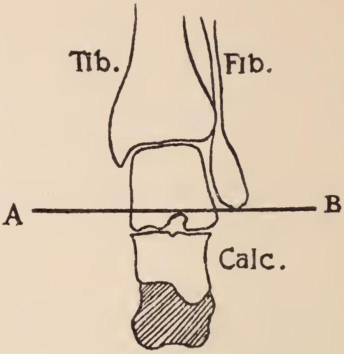

Fig. 6

Paralysis of the deltoid, which has occurred so frequently in this epidemic, needs to be protected from strain as soon as the patient sits up. This can be done by a brace made of stout wire or of steel which holds the arm extended to a right angle and the forearm flexed. If both deltoids are paralyzed I do not advise the use of two such braces as the child will be unable to protect itself from falls and will be almost totally incapacitated.

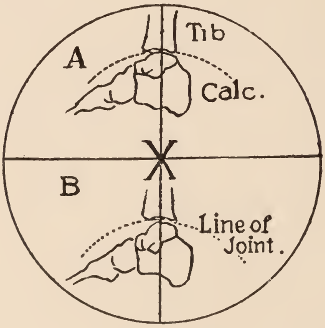

Fig. 7

My plan of treatment in so far as any one plan can be described for a condition which demands not only variations in almost every case but frequent changes in any treatment which is laid down, is this: Braces are removed every morning from 9 o'clock until 11. During this period the child is left to its own resources on the bed or on the floor. He rolls about, tries to move his legs, tries perhaps to stand or even to take a few steps. All the efforts are to be voluntary. There must be no urging. After the braces are applied it is permissible to use a little persuasion to encourage efforts at standing and walking. The danger of fatigue must be avoided by letting the child rest at its first inclination to do so. Nature can be trusted if her warnings are heeded. At night the child is put in a hot bath for fifteen minutes. Too hot a bath is debilitating. Sea salt may be added although its real value is doubtful. While in the bath the patient is encouraged to make efforts at moving the paralyzed muscles. These movements are done with the help of the mother's hand, the full range of motion being completed each time. After the bath the specific instructions regarding muscle training are carried out and the joints are all moved through their normal range of motion. No contractures can possibly occur if the joints are thus manipulated daily. The brace is reapplied and left on until the next morning. When the brace is removed at nine in the morning a rubbing of five minutes is prescribed. The object of this is to restore the circulation where it may have been sluggish. Parents are instructed to examine carefully whenever the brace is removed to discover any points of pressure and to report them immediately. Extra clothing is worn when necessary to preserve the local temperature.

There is something about massage that appeals to the lay mind so that parents are apt to expect it to be prescribed. Quick to realize an opportunity and to grasp it, many healers from all sorts of ranks have become expert masseurs and have been busy getting contracts for treating these cases. These contracts were even sought while the children were still in quarantine. It seems to be a regrettable fact that so much has been made of a line of treatment which has so little to recommend it. We know that massage increases the circulation and thereby will help to an uncertain extent in preventing atrophy. That is all we know about it. Opinions may be had testifying to its greater field of usefulness, but there are no scientific facts upholding these opinions so far as I am aware. It has no effect upon the paralyzed nerve center and can not be the cause of any return of muscular power. On the other hand it may actually injure weakened muscular fibres if it is done violently.

Furthermore the effect upon a child's mind of being taken several times a week for many months to a clinic cannot be other than injurious and therefore the benefits should be weighed carefully to assure one that they are greater than the injurious effects.

Mechano-therapy such as that obtained with the Zander apparatus is objectionable on account of the danger of exhausting the muscles and offers no advantage over muscle-training.

No operations should be attempted until at least two years after the attack and on no child under six years of age. Contractures, which should not be allowed to occur, should be overcome as soon as they are discovered.

The wearing of a brace, be it single or double, and even if a crutch is also necessary, need not out-class a boy or girl from the child's usual pursuit of happiness. Their handicap will exclude them from some games and from some work but don't let them develop self-pity or expect especial consideration on that account. It is much more wholesome to encourage them to enter life's battles shoulder to shoulder with their companions.

THE PREPARALYTIC STAGE OF ACUTE POLIOMYELITIS—ITS DIAGNOSIS AND TREATMENT.

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THE epidemic of Acute Poliomyelitis in New York and Brooklyn has demonstrated the vast importance of early diagnosis of this disease as one of the best means towards combating it. It has emphasized the seriousness of the pre-paralytic stage and minimized to some extent, the former importance of the paralytic period, for previously to this, the entire disease was centered about the paralyses found.

While it has generally been the consensus of opinion that an absolute diagnosis of this stage is well nigh impossible, the symptoms and signs present at this period of the disease are so well defined and uniform to such an extent as to be recognizable to the close observer.

It must be conceded, that a diagnosis of this stage is much more easily made during an epidemic of this duration and magnitude, than during ordinary times when the disease is sporadic, or at best, sparsely endemic.

While a small number of cases of Acute Poliomyelitis may be ushered in by a paralysis as the first symptom, the great majority have prodromata. The length of this prodromal stage varies, so that in some instances it may last a few hours, while in others, it may endure for six or seven days; the average length of this stage is about three days. The severity of the symptoms of this period is not always the same, in some cases being so slight as to be easily overlooked.

The disease is usually ushered in by a rise in temperature which may be attributed by the mother to a disordered stomach, but instead of responding to active catharsis, this temperature continues, reaching at times 106° (Rectal). In the majority of cases, however, it assumes a course at about 101° and 102°, continuing at practically the same point until the stage of paralysis sets in. There may be a gradual decline of the fever, the temperature reaching normal by the end of the first week. A continued fever of a few days' duration with no physical signs to explain it, is one of the paramount symptoms of this disease.

Accompanying this fever, there is generally observed sweating. This may range from a slight perspiration to cases in which the patient is literally drenched and a change of clothes is necessary several times a day. While observers differ as to the constancy of this symptom, the writer has found it in the greater part of the cases he has seen and considers it one of the pathognomonic signs of the preparalytic stage. It is probably due to some pathological derangement of the spinal sweat centers or local vasomotor changes in the skin.

The mother notices at this time that the child has lost all desire to play, is tired, listless and wishes to sleep the major part of the time. This desire to sleep is produced by a hydrocephalic condition and differs from the drowsiness produced by a simple hyperpyrexia in that it becomes intensified as the disease progresses irrespective of the height of the temperature. The severity of this condition varies with the degree of hydrocephalus present and may range from a slight sleepy feeling to a deep, stuporous, apathetic state, presenting, however, one uniform pathognomonic peculiarity, which is, that the patient can be aroused, and when so aroused, appears wide awake and bright, and, if old enough, can readily answer questions intelligently.

The child may, however, become very irritable when awakened and object to being disturbed. The type of drowsiness observed in the preparalytic stage of Poliomyelitis resembles that found in Tubercular Meningitis but differs from it in that in the latter disease, it is almost impossible to arouse the patient.

The sleep itself is not restful, being disturbed by jerky, spasmodic movements of an extremity, twitchings of the face or even convulsions of the entire body. The mother complains that "the child jumps in its sleep."

The mentality is not impaired except in the meningitic, severe hydrocephalic and bulbar types, where an apathetic state is produced.

The hydrocephalus presents also another sign which is very valuable when interpreted correctly. This is Macewen's sign which is elicited by direct percussion over the parietal and temporal regions and obtaining a tympanitic note. This is best obtained by resting the patient's head upon one hand of the observer and percussing directly over the head with the index finger of the other, or else by resting the child's head upon a table. A very quiet room is essential, as any extraneous noise may color the interpretation. The writer considers this sign as a very important one in the preparalytic stage of Acute Poliomyelitis and its presence as a positive indication for treatment. Personal equation enters materially into the interpretation and value of this sign, and rests mostly upon the recognition of the tympany. It is very usual to have one observer consider the sign present in a given case, while another deems it absent. The sign is not of any value in children under two years of age with an open fontanelle.

As the meningeal irritation continues, it will be observed that the child holds its head erect in a peculiarly strained position which prevents its flexion on the chest or any bending forward or backward. This is due to an antero-posterior rigidity of the neck as a result of a spasticity of the extensor muscles of the neck. The lateral group of muscles are generally not affected, permitting rotation of the head from side to side. In attempting to raise the child's head from the pillow, a resistance is met and the upper part of the trunk is also raised. Some cases show a retraction of the neck and toward the beginning of the paralytic stage, an opisthotonus. Older children complain of a constant occipital headache. This anterior posterior rigidity of the neck is one of the prominent signs of this stage and generally produces pain on eliciting.

This pain is a local manifestation of a general hyperesthesia. This irritability of the nervous system is very intense and is especially marked along the spine. The patients complain of the excruciating pain which is so severe as to render their position on their backs one of veritable torture and to remedy this, they attempt to lie on the abdomen. Spontaneous pain in the back may be one of the early symptoms. This hyperesthesia and a concomitant polyneuritis is one of the cardinal symptoms of this stage and is probably due to lesions in the sensory ganglia or else to a cellular infiltration along the nerve roots.

The polyneuritic pain in the extremities is referred mostly to the thigh and inner calf and may be brought out by pressure, or else be spontaneous. At times it may be so exquisite that the little patients cannot bear the weight of the bed clothing or even of stockings. On being requested to walk, they do so on their toes in an endeavor to alleviate the pain which is caused either by the weight of the body on the feet or else by the stretching of the nerve trunks of the leg. One of the early symptoms may be indefinite pains in the extremities, which are aggravated by handling or moving. There may be an uncertain gait at this time probably due to muscle weakness.

The reflexes are exaggerated in this stage. As the disease progresses, the knee reflexes become sluggish and just before paralysis sets in, are lost. It is very common to have one knee jerk exaggerated while the other is sluggish or diminished; in these cases it will be found that the exaggerated reflex is in the more hyperesthetic leg. The plantar reflexes are also exaggerated.

The presence of Kernig's sign is variable, but it generally is found to some extent in one knee or the other. Elicitation of this sign may produce an intense pain due to the polyneuritis.

The gastric symptoms vary. Vomiting may be one of the first signs. The bowels may be loose, though in the majority of cases a constipation has been found. Many a case giving a history of continued fever, vomiting and diarrhea has lead one to think that he is dealing with a gastro-enteritis and it is not until the development of some of the pathognomic symptoms like a continued drowsiness, positive Macewen's, and antero-posterior rigidity of the neck that the correct diagnosis is made. A close watch of gastro-enteric cases, especially during an epidemic of Poliomyelitis is very essential.

In some cases there is observed a retention of urine with or without an accompanying dysuria.

A sore throat is obtained very early, bearing out the contention of some observers that the original site of infection is the nasopharynx. On examination, the throat will be found to be deeply congested, and presenting a purplish discoloration of the tonsilar, buccal and paratine mucous membranes. The tongue also shares in this discoloration and is generally coated.

The skin may present a rash in the preparalytic stage. This rash becomes intensified toward the end of the first week and is more constantly found in the paralytic stage. It varies from a slight punctuate erythema to a maculopapular rash which may extend over the chest, neck, face and extremities. It may be discrete or coalescent. The writer was called in to see a case of poliomyelitis which had been diagnosed in the preparalytic stage as a Scarlet Fever because of the rash. An ascending type of paralysis culminating in death within a week confirmed the correct diagnosis. A branny desquamation may at times be seen in this stage.

The eyes do not present any abnormality at this stage. They react to light and accommodation. Both pupils are equal.

The pulse is high, running along 110 or 120, but of good quality and tension. The arythymia and irregular pulse so frequently found in this disease does not appear as a rule until the paralytic stage has set in.

The respiration in the usual types of the preparalytic stage is normal or perhaps slightly increased. As soon as there is an impairment of breathing with a markedly increased shallow respiration, we are dealing with a case of respiratory involvement, which has already passed through the preparalytic stage. The lung findings are normal. A bronchitis may sometimes be present.

The spinal fluid in Acute Poliomyelitis is uniform in its characteristics and is an important aid in diagnosis, especially in the preparalytic stage. In this stage, it is a clear transparent or slightly turbid fluid under greater pressure than normal, showing an increase in the number of cells, an increase in albumin and globulin and a good reduction of Fehling's solution. In the very early cases there is a polymorphonuclear increase, while a little later, there is an increase in the mononuclear cells, reaching ninety per cent and above. There are no organisms present, differing from the fluid found in Tubercular Meningitis, in which the Tubercle Baccillus is present. It is very difficult to differentiate a Poliomyelitic from a Tubercular fluid in which the organisms are absent. A diagnosis would then depend on the history and clinical findings of the case.

Suppose then that we have a case of a child which gives most of the symptoms enumerated above, what are we as medical men to do? Sit idly by and adopt the policy of "watchful waiting" and note the progress of the disease as it assumes greater and graver dimensions and proportions?

If this epidemic has taught us anything, it has forcibly demonstrated the value of the lumbar puncture, both as a diagnostic and therapeutic agent; it has also taught us that the time to perform a lumbar puncture is not after the damage has been done and the paralysis has already set in, but before there has been any nerve destruction. As soon as a tentative diagnosis has been made, nay, if only a suspicion of the disease has been raised, lumbar puncture should immediately be resorted to, both for diagnostic and therapeutic purposes.

In the preparalytic stage there is an increase of fluid both in the cord and in the ventricles with a resultant syndrome consisting of drowsiness, irritability, polyneuritis and the various other signs of hydrocephalus and meningeal irritation. The logical treatment is to physically reduce this increased amount of fluid and thereby lessen the irritation, reduce the hydrocephalus and arrest the disease. Without entering into any controversy over the individual merits of any of the various procedures advanced for the treatment of the disease, the writer wishes to emphasize the importance of the lumbar puncture and to point out that all the rational methods advocated thus far have for their fundamental principle, a puncture of the spine and a release of the spinal fluid, irrespective of what is subsequently introduced or done.

The methods of treatment which have been used in this epidemic and which are applicable in the preparalytic stage are:

1. Simple lumbar puncture.
2. Lumbar puncture followed by intraspinal injection of convalescent blood serum obtained from the blood of patients who have at one time had the disease. The blood should perviously have been tested for a Wassermann.
3. Lumbar puncture followed by intraspinal injection of horse serum.
4. Lumbar puncture followed by intraspinal injection of Adrenalin (Meltzer).
5. Lumbar puncture followed by the intramuscular injection of 1 to 2 c.c. of the withdrawn fluid into the same patient. This is known as the auto-inoculation method and has been advanced by Ager. It is based upon the theory that an active immunization is produced by the re-injection of the spinal fluid which is supposed to contain the virus of the disease.

In all the methods which call for a re-injection of some other fluid into the spine, as horse serum or convalescent serum, a quantity equal to about one-third of the spinal fluid withdrawn, is injected.

In the cases reported in this series, all but one received the auto-inoculation treatment. The remaining one received an injection of convalescent serum. The good results obtained, in the opinion of the writer, were due more to the early recognition of the cases and immediate puncture thereby lessening the intraspinal pressure, than to the reinoculation or the injection of convalescent serum.

In performing a lumber puncture, strict aseptic conditions must be enforced. The child is held horizontally in a lateral position either in the lap of an assistant or placed on a table near the edge. It is essential that the body be flexed, though this may be difficult at times due to the rigidity of the neck. The needle is introduced in the median line between the fourth and fifth lumbar vertebrae. A complete description of the methods employed and the precautions necessary will be dealt with in a more extensive paper on treatment which is to appear later.

The spinal fluid is found to be under increased pressure, at times being forced through the needle in a spurt. The question has been raised as to the quantity of fluid to be withdrawn. As the greatly increased pressure shows that there is a pathological condition present and as the puncture is performed for the relief of the pressure symptoms, the writer has always allowed as much fluid to escape as possible until the pressure becomes somewhere near the normal, which is about twenty drops to the minute. The escape of the fluid can be regulated by means of the stylet, thus preventing shock which may follow a too rapid escape. The writer has withdrawn as much as sixty c.c. without any untoward results.

If the drowsiness continues, and the general condition does not improve, another puncture should be performed in forty-eight hours, or even in twenty-four if the symptoms become aggravated.

It is very difficult to say in the preparalytic stage what paralyses are likely to be developed, or if any paralysis will ensue at all. In this state of uncertainty, the patient should be given the benefit of the doubt and as many lumbar punctures should be performed before paralysis sets in as is deemed necessary.

The general treatment of this stage calls for the same precautionary measures and quarantine as any other infectious disease. In our present knowledge of the disease, we must consider it contagious and thus protect the community. Early recognition, confirmation by means of lumbar puncture and examination of the fluid and immediate notification of the health authorities are all absolutely essential. Patients in this stage should be placed under a strict surveillance and quarantined for eight weeks, the period adopted by the Board of Health of New York. There is probably more infection spread by children at this period than at any other, because of the large number of cases which pass unrecognized.

The child should be given an absolute rest and that means put to bed and kept there. He should not be touched or handled except when necessary. Above all, he should not be played with, as any movement of his limbs may be detrimental. The room must be quiet and free from all unnecessary furniture. The dishes used for the patient and nurse must be washed and kept separately from those used by the rest of the family.

The use of urotropin has been advocated by many observers. The writer has not seen any beneficial results from its use and therefore has discontinued it. Strychnine and ergot are contraindicated.

The pain due to the hyperesthesia and polyneuritis may be so intense as to call for relief. Small doses of codein, morphine and atropine and the bromides have proven very efficacious for this. Wire cribs placed above the extremities or other points of hyperesthesia to bear the weight of the bedding will do much toward making the patient comfortable. Excessive handling, especially flexion, should not be encouraged.

Antipyretics should not be used as the temperature is self limited. Sponges are contraindicated because of the pain produced in handling the patient.

The diet should be restricted to fluids for the first week at least. With the fall of the temperature and an amelioration of the symptoms, the diet can be made more liberal. It will be found that the children in this disease have an enormous appetite. Nursing babies should be allowed to continue on the breast. Proper formulae should be prescribed for non-nursing infants.

As constipation is the rule, the bowels must be kept open; active and very early catharsis should be resorted to as the gastro-intestinal tract may be one of the avenues of infection. Calomel in broken doses followed by castor oil will be found to be beneficial. Colonic irrigations of saline may be used when there is an abdominal distention present. Gastro-enteritis must be guarded against, especially in formula fed babies.

Spraying of the nose and gargling of the throat with a one per cent solution of Hydrogen Peroxide has been advised.

The following cases from the writer's private practice illustrate the symptoms of the preparalytic stage, the treatment and the results obtained.

Case I: Elmore R., four and one-half years of age. Gave a history of having been exposed to poliomyelitis in the same house. On Monday, July 10, 1916, complained of pain in the back which disappeared during the day, was nauseated, appeared feverish; that evening was unable to sit well, vomited, bowels constipated. On Tuesday, July 11, drowsiness noted, rigidity of neck, gait became uncertain. Temperature 102°, vomited again. Examined again at 6 p. m. and showed marked anterior posterior rigidity of neck. Macewen's + + + +, knee reflexes and plantar exaggerated, Kernig's negative, polyneuritis present in both legs. A lumbar puncture was performed at about 11 p. m. and 40 c.c. of clear fluid under four plus pressure was obtained. Fluid showed slight amount of fibrin, slight increase in cells, ninety-nine per cent mononuclears, albumen plus, globulin +, Fehlings reduced + +. Fifteen cubic centimeters of convalescent blood was reinjected into the spine. On the following day the child appeared brighter. In four days there was a slight imvolvement of the right deltoid which disappeared in a few weeks' time. On July 20th, he was able to sit up and walk; the rigidity of the neck was gone. At the present time he does not show any paralyses.

Case II: Thelma L., three years old. Was taken sick on July 19th, 1916, with fever and constipation, the fever continuing at 104° (Rectal) for three days. The knee jerks and plantar reflexes were slightly exaggerated. On July 20th, the child had become drowsy, sleeping most of the time, but irritable when awakened. Spasms of the face and arms were seen. Perspiration was profuse. Polyneuritis marked in both legs. The reflexes became diminished in the afternoon and were entirely absent by evening. There was no rigidity of the neck. The walk which had been normal now became ataxic. The drowsiness increased in intensity, Macewen's sign strongly positive, Kernig's negative. It was decided to do a lumbar puncture. Twenty cubic centimeters of a clear fluid were obtained under moderate pressure and 1 c.c. of this was injected into the buttocks. Examination of the fluid showed slight increase in cells, ninety per cent mononuclears, albumen +, globulin +, Fehlings +. The following day the temperature fell, reaching normal in two days. The child became brighter and no paralyses developed.

Case III: Julius G., three years old. Gave a history of exposure. Was taken sick on July 29th, 1916, with fever, slight cough, constipation, sweating. The next morning the mother noticed the child had twitchings of face and hands during sleep. Drowsy at times. Walked fairly well, could sit. In addition, had a positive Macewen's, antero-posterior rigidity of the neck, spasticity of both lower extremities, knee jerks exaggerated, Kernig's sign present in both knees. Lumbar puncture was done and 30 c.c. of a typical fluid obtained. Auto inoculation of 1 c.c. intramuscularly into buttock. Examination of fluid showed marked increase in cells, eighty per cent mononuclear, twenty per cent poly, albumen +, globulin +, Frehlings + +. Up to the present time, the child does not show any paralyses. (Sept. 26, 1916.)

Case IV: Evelyn S., two years old. Was taken sick on July 31st. 1916, with a fever which continued for three days, reaching 106° at one time. Very drowsy, twitching in her sleep, irritable when awake, sweating, vomiting, constipated. Also had a marked Macewen's, rigidity of the neck, exaggerated reflexes, polynueritis, Kernig's. Lumbar puncture done on August 2nd. gave 30 c.c. of fluid under great pressure. Fluid was clear, slight increase in cells, ninety-nine per cent large mononuclear, albumen +, globulin +, Fehlings +. The next day the fever subsided and she made an uneventful recovery. At no time were there any paralyses.

CASE V: Frank C., nineteen months old. Gave history of exposure. On July 31st, 1916, one week after sister was taken sick, he was affected with the following symptoms: Temperature of 104°, continuing for three days, staggering gait, twitching of hands and feet, jumping in sleep; drowsy, this becoming intensified, bowels constipated, appetite not affected. Reflexes exaggerated, Kernig's slight in both legs, slight rigidity of neck, Macewen's sign positive (anterior fontanelle closed). Lumbar puncture performed on August 2nd, gave 15 c.c. of fluid under moderate pressure. Fluid slightly turbid, increase in cells, ninety-nine per cent large mononuclear, albumen +, globulin +, Fehlings + +. Auto inoculation of 1 c.c. into buttocks. The temperature subsided, twitchings disappeared, and the child made an uneventful recovery. No paralyses have ever developed.

CASE VI: Norman N., five years old. Was taken sick on August 4th, 1916, giving a history of having sustained a fall a few days previously, injuring his back. He complained of severe lumbar pain which was attributed to his fall. Also complained of an abdominal pain. When called on August 5th, found that he had a temperature of 101° (R) with no symptoms to explain it. Became drowsy that evening and by the next morning there was a moderate rigidity of the neck. No polyneuritis or hyperesthesia except in the lumbar region. The temperature remained the same. That evening there was an increase in the cervical rigidity, the knee reflexes were exaggerated, plantar reflexes slightly so, Kernig's positive. Drowsiness increased but mentally bright. Lumbar puncture was done that evening and 25 c.c. of fluid obtained, 1 c.c. of which was injected into the buttock. Fluid was clear, slight increase in cells, ninety-eight per cent mononuclears, few poly, no organisms, albumen +, globulin +, Fehlings + + +. The next day he was not as drowsy and the rigidity of the neck had disappeared. The reflexes had become sluggish but returned in a week. There was a slight maculopapular rash on chest and neck. He made a good recovery without developing any paralyses, but has slight weakness of one leg.

CASE VII: M. R., aged ten months. Patient of Dr. L. M. Winn. Gave a history of continued fever, drowsiness, vomiting, sweating, and cervical rigidity. Was called on August 15th, 1916, and found a bulging anterior fontanelle, rigidity of the neck, loss of knee reflexes, some hyperesthesia and positive Kernig's, confirmed the doctor's diagnosis of poliomyelitis and did a lumbar puncture, obtained 25 c.c. of typical fluid under great pressure. Fluid was clear, with large amount of fibrin, slight increase in cells, ninety-seven per cent mononuclear, three per cent poly, albumen + +, globulin +, Fehling + + +. Reinjected 1 c.c. of the spinal fluid into the muscles of the buttock. The child made an uneventful recovery, and up to the present time does not show any paralyses.

CASE VIII: D. S., age three years. Patient of Dr. L M. Winn. Gave a history of having been taken sick on August 5th, 1916, with vomiting and slight fever. Drowsy but would awaken and play at times. The next day temperature went to 102°. Twitching of the hands, occipital headache, stiffness of neck. Drowsiness increased and twitching of mouth appeared. Temperature at 103° (Rectal). When called on August 7th, found a positive Macewen's, antero-posterior rigidity of neck, exaggerated reflexes, positive Kernig's and a marked polyneuritis of the legs. Performed a lumbar puncture and obtained 30 c.c. of a typical fluid under greatly increased pressure. Fluid clear, increase in cells, poly thirty per cent, mono seventy per cent, albumen +, globulin +, Fehlings + +. Auto-inoculation of 1 c.c. into buttock. The child made a complete recovery, no paralyses ever developing.

CASE IX: S. R., aged ten months. Patient of Dr. J. H. Leiner. Gave a history of exposure, brother having the disease. Was taken sick on August 7th, 1916, with fever, vomiting, tremors, drowsiness. When called on August 9th, found tremors of extremities, polyneuritis of legs and arms, rigidity of neck, positive Kernig with pain on elicitation, exaggerated reflexes. Performed a lumbar puncture and obtained 50 c.c. of fluid, which showed a marked increase in cells, mononuclear eighty per cent, poly twenty per cent, albumen +, globulin +, Fehlings + +. Injected 1 c.c. of this intramuscularly in the buttock. The next day the temperature dropped from 102° to normal and the drowsiness disappeared. Up to the present time no paralyses have set in.

Conclusions:

1. Diagnosis of the preparalytic stage of Acute Poliomyelitis is possible and also essential to the combating of the disease.

2. The pathognomonic symptoms of this stage are

(*a*) An unexplained continued fever.
(*b*) Drowsiness from which the child can be aroused.
(*c*) Hyperesthesia and polyneuritis.
(*d*) Hydrocephalus as shown by Macewen's sign or a bulging fontanelle.
(*e*) Exaggerated reflexes.
(*f*) Sweating.
(*g*) Antero-posterior rigidity of neck.
(*h*) A spinal fluid which gives certain characteristics.

3. Lumbar puncture should always be performed to clinch the diagnosis and also to reduce the pressure symptoms.

4. A simple lumbar puncture will arrest the disease and prevent paralyses if performed in the pre-paralytic stage.

"EUGENICS AND BIRTH CONTROL"

C. L. Redfield,

Chicago, Ill.

THE eugenists want to shut off all reproduction by the feeble-minded. The birth-controlists are moving along lines which, if carried out, would shut off all reproduction except the feeble-minded. Between the two we would have a perfect system of race suicide.

The first part of the above statement is well known. The second part is not so obvious or well known, hence the following explanation.

While humanity exhibits all grades of human intelligence there are certain accepted groups of powerful-minded persons, normal-minded persons and feeble-minded persons. It has been observed that the members of the so-called superior class usually marry late and produce few offspring, while members of the so-called inferior class usually marry early and produce many offspring. A little mathematical calculation has led many persons to believe that the race is rapidly deteriorating and that in a few generations there will be little left except feeble-minded stock. One of the remedies suggested is to encourage the sons and daughters of superior stock to marry early and go into competition with the inferior stock in the family producing line.

To make a test case of this matter I offered the American Genetic Association, the largest scientific body of its kind in the world, two hundred dollars if it could show a single case of a mentally superior human being having been produced by generations following each other rapidly. The offer was made in April, 1914, and was divided into two parts so as to make the degree of superiority directly dependent upon the time between generations. Later, the offer was raised to one thousand dollars and was extended to include any kind of animal in which either mental or physical power was the essentially desirable thing. In this last offer the matter was made to rest upon a law of nature, and not simply upon some characteristic peculiar to human beings.

Many persons have attempted to win the money, several of them being professional genealogists, but so far no one has accomplished that result. One after another they have been compelled to admit that superior persons are produced by slow breeding and that the very great men have been produced only by generations which showed abnormally great length of time between father and son. Such acknowledgments have come from many sources.

At the same time I have shown that degenerate families like the Jukes, the Kallikaks, the Ishmaels, etc., have been produced by breeding at the rate of four, five and even six generations to the century. Also, that rapid generations always result in low mentality, and that the rate of breeding, as represented by the number of generations per century is a fairly accurate index of the inherited mental quality.

What is the explanation? We may find a clue to it in the methods employed to determine feeble-mindedness, and in the maxim that from the feeble-minded we get only feeble-minded. Feeble-mindedness is determined by comparing the actual mental development, as found by the Binet test, with the actual age of the person at the time the test was made. Thus, a child of ten having the mentality of a normal child of six would have a certain degree of feeble-mindedness. A child of fifteen with the mentality of a normal child of ten would be feeble-minded. A person of twenty with the mentality of fifteen would be feeble-minded. A person of thirty with the mentality of a normal person of twenty would be feeble-minded.

In this country, the normal or average parent, male and female considered together, is about thirty years of age when the average child is born. Hence, the average child is born to parents having the normal mentality of thirty years. If we should substitute a twenty-year-old parent for the average thirty-year-old parent we would be substituting a feeble-minded parent for a normal-minded one and should expect a corresponding feeble-minded offspring, or one approaching feeble-mindedness. If we should repeat that substitution for two or three generations in succession we would have genuine and unmistakable feeble-mindedness.

A child of ten with the mentality of a fifteen-year-old would be powerful-minded. A person of twenty with the mentality of a normal person of thirty would be powerful-minded. A person of thirty having the mentality of a forty-year-old would be powerful-minded. If we should substitute a forty-year-old parent for the normal or average thirty-year-old parent we would be substituting a powerful-minded parent for a normal parent and we should expect powerful-minded offspring.

The idea that if the parent is normal-minded it does not make any difference what stage of development he is in when the child is conceived is not sound. It is flatly contradicted by the facts. We always get feeble-mindedness when we produce children continually from young parents, and we never get powerful-mindedness unless we produce children for successive generations from more than normally mature parents. The mentality existing in the parents at time of conception is the mentality inherited by the offspring.

If birth control has any object it is to enable parents to limit their families to one, two or three children produced soon after marriage. As the vast majority of all such children are by parents under thirty it is evident that a general application of birth control would quickly give us nothing but feeble-minded stock, no matter how good the original stock might be. Birth control may be useful, but it is a very dangerous thing for the general public to play with without scientific knowledge of what the results will be.

It may be said that birth control aims only at shutting off abnormally large families, to which I reply that the last is the best and many eminent men have been the last of large families. Confucius and Loyola were each the last of eleven children. Wedgewood, the potter, and Arkwright, the inventor, were each the last of thirteen children. Robert Hall, the pulpit orator, and Robert Boyle, the father of chemistry, were each the last of fourteen children. Rev. Philip Doddridge and Audubon's father were each the last of twenty children. Admiral Popham, the most scientific of British seamen, was the twenty-first child, and the mother of John and Charles Wesley was her father's twenty-fifth child. Birth control would shut every one of these out of existence, and practically all of the eminent men who have ever lived. In nearly all cases, they or their parents came in the last part of large families. Benjamin Franklin was the youngest son of the youngest son for five generations in succession, and Abraham Lincoln resulted from the combination of the youngest children of four large families.

The eldest child of the family ordinarily has the most social advantages and opportunities, and there are many cases of the eldest child being the eminent member. But the eldest child of the eldest child never is eminent when generations succeed each other at a rate of approximately twenty-five years from father to son. To get really superior stock the time between generations must be raised to something more than thirty years, and preferably to something more than thirty-five years.

EDITORIAL

BIRTH CONTROL

IN one of the daily papers there recently appeared an account of a woman who pleaded guilty to a second charge of burglary and who gave in extenuation of her act a statement to the effect that she had six children, the youngest ten months old and expected shortly to give birth to another, that her husband had developed tuberculosis and that the Health Department would not permit him to continue his work as an operator on children's clothing; that she had worked as she could for the family's support until her condition made it impossible for her to work further and that the necessity of providing food for her family had driven her to theft. In his opinion the Judge of the Court of Sessions gave as a reason for suspending sentence on this second offense his belief that the circumstances warranted unusual clemency and went on to say "The husband is unable to work because of tuberculosis:

"Nevertheless he goes on becoming the father of children who have very little chance under the conditions to be anything else but tubercular, and, themselves growing up, to repeat the process with society. There is no law against that.

"But we have not only no birth regulation in such cases, but if information is given with respect to birth regulation people are brought to the bar of justice for it. There is a law they violate."

Judge Wadhams pointed out that many nations of Europe had adopted birth regulation with seemingly excellent results. He queried whether Americans had taken as common sense a view of the subject as we might.

"I believe," the opinion continued, "that we are living in an age of ignorance which at some future time will be looked upon aghast as we look back upon conditions which we now permit to exist. So that here we have a family increasing in number, with a tubercular husband, with a woman with a child at her breast, with other small children at her skirts, and no money."

Judge Wadhams in making a public statement of this kind from the bench has, as it were, brought to official attention a question which is being agitated in many quarters. Surely it seems wrong that a man afflicted with tuberculosis and of such a social development as to fail to recognize the wrong that he inflicts upon his wife and children by begetting fresh victims for a tuberculous environment and who lacks the mental development to exercise self control for their sake, should be allowed to go on in ignorance. Surely no more clear cut example can be asked for by the advocates of public instruction in birth control. It is a sin for such a man to be endued with a father's privileges; it is a sin against the community to bring forth sickly children to become charges upon public charity; it is a sin against womanhood to degrade a mother as this woman was degraded. But is the problem to be solved by placing in the hands of such people definite instructions as to how they may pre-determine and control the size of their family? There are many fundamental principles underlying this momentous question that must not be lightly brushed aside, for upon them depends the future of the race. Doubtless the question of marriage and its consequences has a spiritual and intellectual side that is no less important than the physical. One may question the wisdom of tampering in any degree with the spiritual development of men and women; there are big minded men and women who see in marriage not only the joy of mutual understanding and uninterrupted companionship, but the grave responsibility that rests upon them as sponsors for the next generation. To such the responsibilities as well as the joys of parentage bring a rounding out of character that fits them to be homemakers and trainers of a following generation that may be expected to have ideals as lofty as their own. There is another class of people of whom it may be said that marriage represents merely the gratification of purely selfish motives, increased comforts, increased luxuries, increased license. The fact that many such unions are childless and that among the wealthy there are many whose children are given over to the exclusive care of nurses, so that the social life of the parents may not be hampered, is the best evidence that selfishness and licentiousness are the underlying motives in their lives. Such people are not good citizens; it is the example of such that has gone far to cause the disappearance of the American home. The future of the United States as a nation depends more upon the moral character of its citizens than it does upon their physical fitness. In most of the discussions upon this subject which have been presented to the public, the major emphasis has been laid upon the overwhelming proportion of births among the poor and unfit and the argument is made to rest purely on the theorem that because the poor and ignorant multiply out of proportion to the rich and cultured and healthy, therefore, the future welfare of the country will be benefited by providing to the poor and ignorant a means of controlling their excessive birthrate. The rank materialism of this theorem is evident. If one removes parental responsibility there is also removed the mental discipline which makes for moral growth; and without moral and spiritual growth, future generations will relapse into luxury and licentiousness in this country as they did in ancient Greece, in ancient Rome, and in ancient Babylon. The motive underlying birth control is a double motive, gloss it over as one may; there is the licentious craving as well as the desire to make parentage less burdensome. It is respectfully submitted that the sexual craving was placed in animate creation for the sole purpose of preventing that which the advocates of birth control seem to overlook. Such improvement in the moral development of the human race as has come has been achieved through tribulations and trial and sorrow. Responsibility breeds responsibility, ease and comfort and luxury breed selfishness and licentiousness.

Before Judge Wadhams and the other advocates of birth control take the final step to place in the hands of the masses an infallible recipe, let them consider whether the reverse side of the question is not more important than the obverse and whether in endeavoring to subvert natural processes we are not breeding future sorrow and future trouble; yes, and future degeneration out of all proportion to present benefit.

H. G. W.

NEW MEMBERS.

THE Membership Committee of the Associated Physicians of Long Island desires to call attention to the membership application blank which will be found among the advertising pages of the Journal. It is their hope that by keeping constantly before the members of the Association the fact that a blank is always available, opportunities for interesting physicians in the Association may be taken advantage of when they occur.

One decided advantage of membership is the opportunity to meet and become acquainted with one's fellow practitioners from all over Long Island, a privilege that can hardly be appreciated until it is experienced. Including, as it does, representatives of all schools of medicine, the Society tends to draw together and unify the profession as no other organization can. The best way to appreciate your neighbor is to know him and learn what a splendid fellow he is, and the Meetings of the Associated Physicians as they occur here, there and elsewhere about Long Island offer delightful opportunities for getting acquainted.

The extremely low membership fee of $2.00 makes membership easv. Modesty forbids us to dwell too much upon the advantage of receiving the Journal monthly, but in the language of the sideshow barker, we may assure you that this unprecedented aggregation of combined wonders is well worth the price of admission.

CHURCH HEALING.

THE Court of Appeals reversed the conviction of Willis Vernon Cole, a Christian Science Healer, and granted him a new trial on the ground that, as Mr. Cole was at the time of his conviction a member in good standing of the Christian Science Church, he was merely following the tenets of his faith and consequently, even though he extended treatment to those outside of his Church, he was still within the protection of Section 173 of the Public Health Law which says: "This article shall not be construed to affect the practice of the religious tenets of any church." At a recent meeting of the Medical Society of the County of New York, it was decided that the next Legislature shall be petitioned to strike out this section. Nobody doubts for a moment that there will be the biggest kind of a fight precipitated by this action, for it means that if successful the profits of the Christian Science Church will be practically wiped out and naturally the church will fight for its pocketbook. This is a consummation which will be of genuine benefit to church and public alike. There is no doubt that the opportunity to practice healing under the cloak of the Christian Science Church has attracted many charlatans who are still tremendously active and pose as pillars of the church. These people are active factors in propagating the follies of Christian Science. That their cult is a profitable one is evidenced by the magnificence of their churches and prosperous looking congregations (it is rare to find Christian Scientists among the poor).

Only recently the statement has appeared in the newspapers that a million dollars has been received for the purpose of establishing a Christian Science sanitarium, whatever that may be, in or near Boston. One may interpret a Christian Science sanitarium in a variety of ways, just as he may interpret Mrs. Eddy's "Science and Health" in any way he pleases. A church that denies the possibility of disease stultifies itself by establishing an institution for the care of disease; or else it advertises that its particular treatment of disease is so profitable as to demand modern hospital accommodations. Is the sanitarium for sick Christian Scientists; or is it for the treatment of the unenlightened by Christian Science methods? We have been told that there is a Christian Science doctor in Brooklyn, whose business it is to sign death certificates for the multitude of Christian Science failures; doctor and Sanitarium should combine forces..

To return to the question of legalized quackery, the sooner the general profession awakens to the imperative need for concerted action, the better. Each year has seen fresh restrictions urged for the practice of medicine and fresh exemptions permitted for unqualified half-educated parasites who want the profits of healing without its responsibilities. The time has come when the profession in the State of New York shall declare itself unequivocally at Albany and shall use practical methods to convince the Legislature of its real influence in the community. We shall have to meet specious arguments backed by long pocketbooks. The issue is a vital one, for upon it depends the question of future trespasses upon the rights of physicians of all manner of fakirs. If sufficient influence can be brought to bear to rescind the special privilege clause of the Christian Scientists much can be done to curtail the present license granted to other unqualified healers. A tendency of physicians to lay aside the work in hand, or to depute it to someone else is the real reason for our present trouble. A very little of the get-together spirit and a moderate sustained effort will accomplish wonders; and just because the New York County Society has started the game, don't leave the burden of it altogether on their shoulders, for a part of it is yours and your failure to help will mean failure for everybody. There is too much of the "let-George-do-it" method among doctors. Let us try to substitute the "me-too" notion.

H. G. W.

Obituaries

DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

JOHN ALVA McCORKLE, A.M., M.D.

Dr. McCorkle was born in Lardstown, Ohio, February 4, 1847, and died in Brooklyn, N. Y., August 15, 1916. He was the son of Archibald and Mary (Jones) McCorkle, both of Ohio.

His early education was received at Vermillion Institute and Hiram College.

His Medical Education was received at the University of Michigan, where he received the degree of M.D. in 1873—a post graduate course at the Long Island College Hospital in the same year with the degree of M. D., Kenyon College conferring upon him the honorary degree of A.M. in 1908.

After his graduation he served as interne in the Long Island College Hospital during 1873-74 and Chemist to the Brooklyn Health Department in 1875. During his professional life he was in practice in this city.

He held the position of Visiting Physician to the Long Island College Hospital from 1875; Consulting Physician to Kings County, Norwegian; and the New York State Hospital for Crippled and Deformed Children; Director Brooklyn Eye and Ear Hospital; President Medical Board, Kingston Ave. Hospital; Member of the Medical Advisory Board, Health Department; Director Greenpoint Hospital, and The Brooklyn Diet Dispensary.

Dr. McCorkle's connection with the Long Island College Hospital dates from his graduation, 1874-78, Lecturer on Chemistry; 1878-79, Lecturer on Materia-medica and Therapeutics; 1879-85, Professor of Materia-medica and Therapeutics; 1886-1916, Professor of the Practice of Medicine; 1904-1916, President of the Long Island College Hospital.

He was a member of the Medical Society, County of Kings from 1875-1916 of which he was president in 1884-85 and censor in 1887-88; Brooklyn Pathological Society 1878-1916; New York Academy of Medicine 1887-1916; The Brooklyn Medical Book Club; Alumni Association, Long Island College Hospital, of which he was President in 1896; The Associated Physicians of Long Island 1899-1916; Member of Cosmopolitan Lodge, No. 585, F. A. M.; Long Island Historical Society, Hamilton; Crescent and Excelsior Clubs.

Dinner to John A. McCorkle, M.D., at the Montauk Club by the Citizens of Brooklyn, February 14th, 1903.

MEDICAL PAPERS.

1879—The Pre-Tubercular Stage of Phthisis.
1881—Therapeutic Hints Based Upon Certain Arrested or Pervented Physiological Processes.
1882—Strychnia; Physiological Action and Special Therapy.
1884—The Use of Alcohol as a Medicine.
1888—Certain Facts in Relation to Treatment.
1889—Treatment of Typhoid Fever.
1902—Therapeutic Uses of the Alkalies.
1908—Address—Tuberculosis.

IN HONOR OF JOHN A. McCORKLE, A.M., M.D., OCT. 8, 1916.

Rev. Dr. Newell Dwight Hillis, Subject of his Sermon being, "Brooklyn's Indebtedness to its Physicians and Surgeons."

Oct. 11, 1916. The opening of the fifty-eighth session of the Long Island College Hospital took the form of a memorial in honor of the late John A. McCorkle, M. D. Addresses were delivered by Percy S. Dudley, Henry A. Fairbairn, M.D. and Frank E. West, M.D.

W. S., Sr.

JOHN LESTER KEEP, M.D.

Dr. Keep was born on March 18, 1838 in New Haven, Connecticut and died at Shelter Island Heights, Long Island, September 30, 1916. He was the son of Lester Keep, M.D. His early education was received at Thetford Academy, Vermont, his medical education was at Yale University and Hahnemann Medical College of Philadelphia, where he received his degree of M.D. in 1860, and the New York Homœopathic Medical College in 1866.

During his professional life he was the organizer of the Gates Avenue Homœopathic Dispensary, of which he was Medical Director. Physician to the Homœopathic Hospital. In 1868 he was commissioned a Surgeon of the Thirteenth Regiment, in 1880 Surgeon of the Fifth Brigade, in 1883 he was commissioned Colonel by Brevet; a member of the Homœopathic Medical Society of the County of Kings; American Institute of Homœopathy; Hahnemann Association of New York; Long Island Historical Society; New England Society; Altair Lodge, No. 601, F. A. M.; Associated Physicians of Long Island, 1911-16.

He married in 1865, Sarah Colt Avery, who, with a son and daughter, survives him.

W. S., Sr.

WILLIAM FRANCIS WALDRON, M.D.

Dr. Waldron was born in what is known as the Greenpoint section of our city, where he died August 24, 1916. He was the son of William F. Waldron and Ellen Leddy.

He was educated in the public schools and St. Francis Xavier College. His medical degree he received from the University of New York in 1893. He was a member of the Medical Society, County of Kings, 1911-13, and the Jefferson Democratic Club.

W. S., Sr.

ISAIAH CHARLES BARNHART, M.D.

Dr. Barnhart was born March 13, 1848, at Lattsburg, Ohio, and died in Brooklyn, N. Y., July 13, 1916. He was the son of John Barnhart of Ohio., and Mary Felger of Pennsylvania.

He was educated at Drew Theological Seminary. His medical education was received at the Long Island College Hospital, where he was graduated in the class of 1886. This was followed by a post graduate course at the N. Y. Post Graduate School.

He was a member of the Medical Society, County of Kings, 1900-01.

Dr. Barnhart was married on December 26, 1877 to Caroline M. Van Sise.

W. S., Sr.

EDWIN ALONZO GOODRIDGE, A.M., M.D.

Dr. Goodridge died in Flushing, L. I., May 31, 1916, where he had been in practice for a number of years. His medical education was received at the College of Physicians and Surgeons, N. Y., where he received the degree of M.D., in 1871. His A.M. was conferred upon him by Princeton in 1869. During his professional life he was a member of the Board of Education of which he was president; physician to the Flushing Hospital and New York Infant Asylum.

Dr. Goodridge was born in Massena Center, N. Y. in 1840, and at the outbreak of the Civil War he enlisted in Company K, 106 New York Infantry.

He was a member of the Princeton Club; George Washington Post, G. A. R.; Queens County Medical Society; Associated Physicians of Long Island, 1899-1916; Medical Society of Greater New York; New York Academy of Medicine; American Medical Association; American Association for the Advancement of Science and The Sons of the Revolution.

He is survived by his widow and a son, Malcolm Goodridge, M. D., of New York.

W. S., Sr.

LAWRENCE THOMAS AITKIN, M.D.

Dr. Aitkin was born in Brooklyn, N. Y., where he died on June 18, 1916. He was educated at St. Francis College and The Long Island College Hospital, where he received his degree in 1908. A member of the Medical Society, County of Kings, 1912-13. He was the son of Thomas Aitkin and Mary Corbett. Dr. Aitkin was unmarried.

W. S., Sr.

JOHN FERDINAND BATES, M.D.

Dr. Bates was born in 1834 and died in East Setauket, L. I., April 19, 1916. He is survived by his widow, Mary C. and three children, Mrs. Archibald Gildersleeve, Mrs. Isabel Basten and J. Ferdinand Bates.

His medical education was received at the Berkshire Medical College, where he was graduated in 1860.

For six years he practiced in Troy, N. Y. and in 1868 came to Setauket. He was a member of the Suffolk County Medical Society, American Medical Association and the Associated Physicians of Long Island, 1906-1916.

W. S., Sr.

HENRY J. McKENNA, M.D. ..

Dr. McKenna was born in Greenpoint section of our city and died at Long Island City, October 17, 1916. He was the son of Henry and Helen McKenna. He is survived by his wife, Louise Doscano, and a son, Henry.

His medical education was received at the University and Bellevue Hospital Medical College, where he was graduated in 1901. During his professional life he was Surgeon to St. Johns Hospital, Long Island City; Member of the Queens Nassau Medical Society and the Associated Physicians of Long Island from 1905-1916; a member of Queensborough Lodge of Elks and Colon Council Knights of Columbus.

W. S., Sr.

WILLIAM HALL BRACE PRATT, A.B., M.D.

Dr. Pratt was born in Brooklyn, N. Y., October 16, 1842, where he died, August 27, 1916. He was the son of Henry Z. and Lucy E. (Brace) Pratt.

He was educated in the public schools and Yale University, where he received his degree of A.B. in 1864. His medical education was received at the College of Physicians and Surgeons, N. Y., graduating in the class of 1869.

This was followed as interne at Bellevue Hospital. His post graduate studies were at the University of Vienna in 1871. He begun the practice of Medicine in Brooklyn, N. Y. For a number of years he was physician to the M. E. Hospital; a member of the Medical Society, County of Kings from 1872-1916 and of Orion Lodge, No. 717, F. A. M., of which he was Master in 1878-79. Riding and Driving and Carlton Clubs, New England Society, Long Island Historical Society, Yale Alumni Association, Psi Upsilon fraternity and Skull and Bones Society of Yale.

Dr. Pratt was married to Miss Mary Houghton, December 28, 1876, who with her four children survive him, Albert Houghton Pratt, William B. Pratt, Lucy B. Fackner and Miss Marilla Pratt.

W. S., Sr.

TRAVERSE ROCKE MAXFIELD, M.D.

Dr. Maxfield was born, January 13, 1862, at Como, Illinois, and died at Brooklyn, N. Y., April 23, 1916. He was the son of Albert J. Maxfield of R. I. and Julie F. Sherman of Connecticut.

Dr. Maxfield was married to Alice B. Barber on September 28, 1887, at New Haven, Conn.

His medical education was received at the Michigan Medical College, where he was graduated in 1884. At the time of his death he was Assistant Sanitary Superintendent, Department of Health.

He was a member of the Medical Society, County of Kings, 1906-16, and the Associated Physicians of Long Island, 1914-16.

Steward of the Marine Hospital, Michigan, 1881-85; U. S. Pension Examiner, 1892-97, Surgeon 114 Regiment, N. G., N. Y.

A member of Antiquity Lodge, F. A. M., Chaldean Chapter, R. A. M., Damascus Commandery, K. T., Kismet Temple, A. A. O. N. M. S. and the Montauk, Crescent and Apollo Club.

W. S., Sr.

NATHANIEL MATSON, M.D.

Dr. Matson was born on March 6, 1839, at Schodack Landing, N. Y., and died in Brooklyn, October 15, 1916. His early education was received at the Kinderhook Academy and Williston Seminary. His medical education was received in the New York University, where he was graduated in the class of 1864. His professional life so far as the practice of medicine was concerned was in this city, fifty years of faithful service.

After his graduation he received the appointment of Assistant Surgeon of the First Regiment of Connecticut Artillery. He was mustered out in May, 1866. He was for a number of years Physician to the Bushwick Hospital; a member of the Medical Society, County of Kings from 1872-1916; Brooklyn Pathological Society; Associated Physicians of Long Island, 1902-16; a member of Acanthus Lodge, No. 719 F. A. M.; Brooklyn Masonic Veterans; Rankin Post, G. A. R. and the Invincible Club.

Dr. Matson was married in 1872 to Anna Glover, who with three daughters survive him, Esther, Clarine and Nathalle Matson.

W. S., Sr.

WILLIAM MERRILL BULLARD, M.D.

Dr. Bullard was born in Brooklyn, N. Y., in 1842, where he died May 12, 1916. He was the son of William Bullard and Mary Henderson.

He was educated at Amherst College and graduated in medicine at the University of Goettingen in 1867. He practiced for a number of years in this city and was a member of the Medical Society County of Kings from 1869-1872; New York Academy of Medicine and the New York Medico Legal Society.

W. S., Sr.

DAVID FISHER ATWATER, A.B., M.D.

Dr. Atwater was born at New Bedford, Conn. in 1818, and died at Springfield, Mass., May 2, 1916. He was educated at Yale University, receiving his A.B. degree in 1839 and M.D., 1842. For a number of years he was in practice in this city. He held the position of Surgeon in the 64th New York Infantry during the war, Health Officer of the City of Brooklyn in 1844-45 and a member of the Medical Society, County of Kings from 1842-1855.

W. S., Sr.

JOHN ALVA McCORKLE.

Addresses delivered by Mr. Percy S. Dudley, Dr. Henry A. Fairbairn and Dr. Frank E. West, at a memorial meeting held at Long Island College Hospital, October 11, 1916.

Address by Mr. Percy S. Dudley,

President of the Board of Regents of the Long Island College Hospital.

Gentlemen:

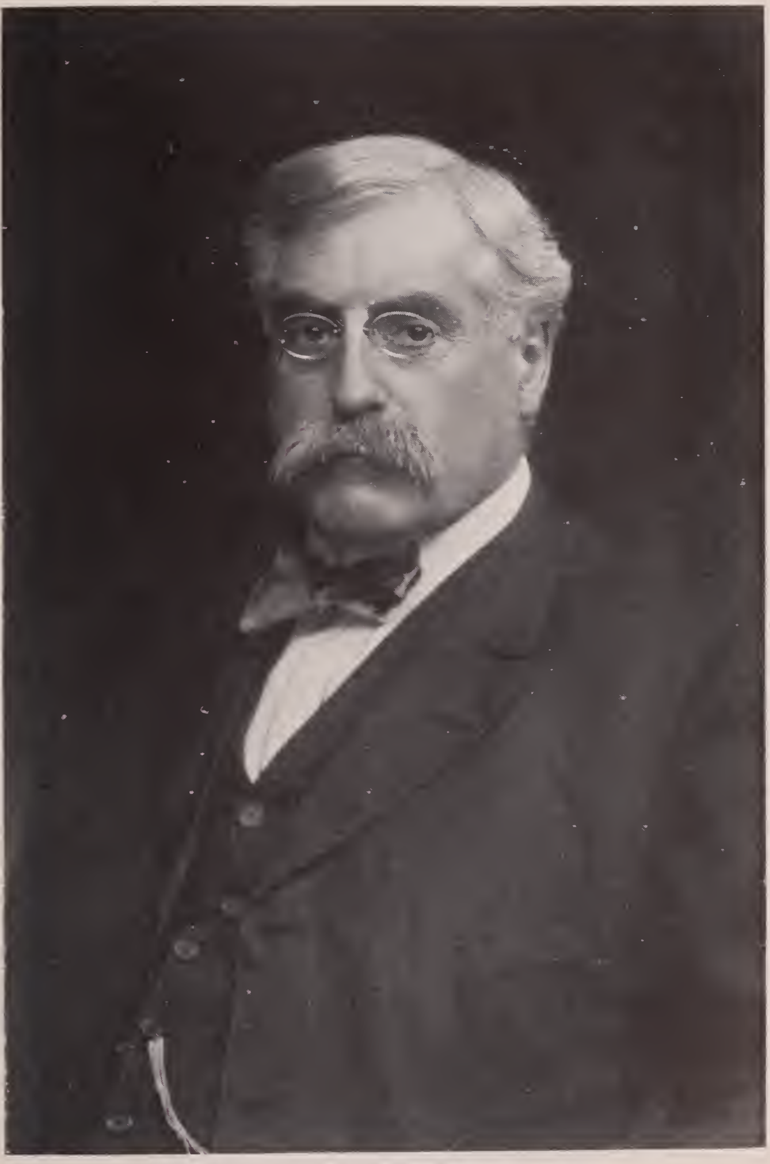
It has been the custom at the opening of the College year to greet the returning students and to welcome the incoming class by an address on some topic of scientific interest and educational value. This year we have met in the shadow of a great loss—the death of the late John Alva McCorkle, President of the Collegiate Department and Professor of Medicine.

It seems appropriate on this occasion to recall to our minds the Professor, the Physician, the Friend, who has gone, and, in this college and hospital which he loved so dearly, to pay a tribute to his memory. If you young men will remember the lesson of his life, no day spent in the classroom, throughout your course, will be more profitable; for you will learn the highest ideals and noblest spirit of your high and noble profession.

Since his matriculation as a senior in the Class of '73 Doctor McCorkle has been a part of the life of the Long Island College Hospital. The unbroken record of his service to this Institution runs through his whole professional career of over forty years. He became connected with it when its early struggles for existence had hardly passed, and he aided its growth through the years to full maturity in all departments. In 1873, few additions had been made to the original building occupied. He lived to see the old structure wholly replaced by a modern hospital and expanded by the affiliation with the Hoagland Laboratory and the Polhemus Memorial Clinic. In 1873 the College had less than a hundred students and the hospital less than a hundred beds. Now there are over four hundred students and over five hundred beds.

Many men and many minds share the credit for these wonderful results achieved, but to no single person does the Long Island College Hospital owe a larger debt of gratitude than to John A. McCorkle. He gave generously, according to his means, and influenced others to give liberally; but more than all, he gave of himself. His skill has relieved thousands of sick; his learning, transmitted to thousands of students, has equipped them in their turn to do likewise; his personality and example have been an inspiration to all, sick or well, with whom he came in contact. Who can measure the unending and ever broadening stream of benefaction flowing from his life and work? It is the devoted service of such men as Dr. McCorkle that constitutes the true greatness of such an institution as this, and it is the glory of such an institution that it is worthy of the service of so great a man.

As a teacher, both in the lecture room and at the bedside, Dr, McCorkle had a singularly happy faculty of imparting to pupils his stores of knowledge and the results of his wide experience. With his



JOHN ALVA McCORKLE, A.M., M.D.

patients, his presence itself was a remedy. His own words, spoken of one of his predecessors, may well be applied to himself; for "his presence flooded the sickroom with that most powerful of aids: the sunlight of hope." Encouraging or sympathetic as the case required, he obtained the implicit confidence of the patient to assist Nature and his own wise counsel in the battle with disease. "So gentle was he, so thoughtful, so calm, so absorbed in the case before him, not to turn round and look for a tribute to his sagacity, not to bolster himself in a favorite theory, but to find out all he could and to weigh gravely and cautiously all that he found, that to follow him in his morning visit was not only to take a lesson in the healing art, it was learning how to learn, how to move, how to look, how to feel, if that can be learned. To visit with him was a medical education."

This description by Doctor Oliver Wendell Holmes of his preceptor, Doctor James Jackson, fits Doctor McCorkle without changing a phrase, as if the mantle of that patriarch had fallen, in our generation, upon the shoulders of a worthy son.

Not only in sickness, but in health, Doctor McCorkle was the valued friend, the trusted adviser, in hundreds of homes; a perfect example of the type of man nearest to the heart of us all—the true family physician.

Doctor McCorkle attained eminence in his profession by no accident or sudden fight. He loved his profession, and for it he willingly gave up any other ambitions. He studied constantly and worked unremittingly to improve himself as a teacher and as a physician. A stranger in the city and with only the opportunities common to all, he made his way, in spite of poverty and disappointments, to the highest rank.

Modest in his bearing, courteous in his speech, pure in his life, always ready to answer a call for help from sick and poor alike, the Doctor never spared himself nor sought the material return to which his talent and skill entitled him; but the well-deserved reward is his, of the gratitude of thousands of patients, the esteem of his professional brothers, the love of his many friends and the veneration of the entire community.

This is but a brief and inadequate expression of an intimate lifelong friendship, but much that I recall is of too personal a nature. I may, however, tell you how near we came to losing Doctor McCorkle at the outset. On graduating here, he found that through delay in application or some other reason, the vacancies on the House Staff had been filled. Bitterly disappointed, he packed his bag to leave Brooklyn, and had reached Atlantic Avenue on his way. While waiting for a car, Professor Armor came down the street and asked where he was going. Doctor McCorkle replied that, as there was no place for him here, he was taking Horace Greeley's advice and going west. Professor Armor said: "I have been looking for you all the morning. A place has been made for you. Come with me. You are to go on duty at once." And when the Doctor told the story, he added: "And I've been on active duty ever since." I am glad to recall that it was my father who, at Doctor Armor's request, authorized that place to be made.

Of Doctor McCorkle's professional career since that time, others, more competent than I, will address you and you will now hear from his colleagues on the Board of Regents, the Council and the Faculty. I take pleasure in introducing to you Doctor Fairbairn, representing our

Board of Regents, and also representing the Council in the absence of D. Glentworth R. Butler.

Address by Dr. Henry A. Fairbairn.

Dr. John A. McCorkle was our beloved friend and benefactor. When I say that I am sure that I voice the sentiment of every member of the Board. It was they who gladly appointed him the President of this college after the nomination by the Faculty and Council; gladly, I say, for he had already demonstrated his power and ability as a guide and leader. He drew his inspiration from those fine characters, Dr. Armor and Dr. Dudley and then when their crown fell upon him he proved his metal by carrying on their undertaking to this glorious stage. You young men will never realize the magnitude of this work until it falls to your lot to build hospitals and colleges and to serve on the boards which manage them. When you and your friends come down yonder street and behold that mass of buildings which make up the hospital—the central building, the north and south wings; when you enter those buildings and examine the fine equipment, say to yourselves, say to your friends, the inspiring genius of all this was John A. McCorkle. The donors would tell you, as they have told me, it was their love for and confidence in McCorkle which turned their hearts and funds into this goodly work. Who was the inspiring genius in the educational work carried on in this great institution in which we are assembled? It was McCorkle's faith and perseverance which impelled it. I say these things in public acknowledgment of what our late colleague accomplished. He never failed as he never became restive under the burdens we placed upon him and his one thought was to see the hospital and college succeed and to that end he gave his life. It will not, I trust, be out of place to point out to you young gentlemen who are pursuing your studies here some of the elements of Dr. McCorkle's success.

He was a man of industry, energy. He looked askance at a lazy man. He did not measure his own procedures by time unless he was bound by schedule. He has amused me by complaining that the hours of sleep were so prolonged. "What a waste of time it is," he would say, "that we should have to sleep one-third of our time away!" Energy, young man, is a fundamental quality of success! When we see a lounger, a neglector of duty, we are quite prepared to see his failure. Dr. McCorkle's first thought was to do good to his fellows. That was at the foundation of his abounding courtesy. The student, the practitioner who sought his council, the patient who applied for treatment, one and all will testify to his cordiality of manners which was certainly very attractive; and this was one of the reasons why we all gathered around him, why we all loved to meet him and which will make us sadly miss him. The saying "Manners maketh the man" was well exemplified in him. The subdued will, the friendly mind, the studying the comfort of others, quietness of demeanor were traits which stood forth in him. Busy man that he was, he never gave you the impression that he was in a hurry. He always had time to listen to you. That is an anomaly in the present time—a fine contrast. Everyone appears to be in a hurry today, even those who have nothing to do. This mad rush which invades every department of life, begets a disregard for the comfort of others. Dr. McCorkle was intensely humane. He was compassionate. He was a man of tender sympathies. I was struck with that in my early days when I knew him as the obstetrician and family doctor. He always brought joy and comfort to father, mother and child. They loved him. Now, gentlemen, what was really at the foundation of this fine character? What the impelling force? It was a thorough realization of that scriptural axiom, "Man shall not live by bread alone." He knew that the mere materialist had but small claim upon us. He knew that while you can figure out to a mathematical nicety the gross lesions of the body that the motive power had to be reckoned with to make their correction sure. That led to his respectful consideration of those who came to him for aid. He did not treat them as mere machines because he knew they were something more. I take it that half the trouble in the world arises from the misconception that the human being is a mechanical device, pure and simple.

Dr. McCorke bowed to the supreme law of our being. He ever kept before him the ideals of our profession. He never occupied the position of a mere technician in the field of medicine. When, therefore, men came in contact with him, they found the sweet, loving friend, the tender companion, the thoughtful associate and the benefactor of humanity. May his crown fall upon one equally endowed to carry on this work, to draw to it much needed funds and to recruit its army of trusted friends.

Address by Dr. Frank E. West.

We meet today to honor the memory of one of the greatest of Long Island's graduates. No Alma Mater ever had a truer or more loyal son. Indeed, the name of Dr. McCorkle and Long Island College Hospital are so intimately connected that it is impossible to disassociate them. The memory of one, of necessity, suggests the other.

John Alva McCorkle was born in Lordstown, Ohio, February 4, 1847. He was of Scotch descent. His early education was obtained in a small town in Southern Ohio. As a young man he went to Hiram College. He did not graduate here, remaining only a couple of years but went to the University of Michigan, entering the medical department and graduating in medicine in 1873. He immediately came to Brooklyn for the clinical advantages at the Long Island College Hospital and received a second degree in medicine the last of June of that year. On graduation he was appointed as house physician in the hospital where he spent a year.

When the doctor came from the west he brought a letter from a member of the Ann Arbor faculty to Dr. Samuel G. Armor who was then dean of the faculty and professor of medicine. The writing of this letter was a most fortunate circumstance, fortunate for Dr. McCorkle, fortunate for the Long Island College Hospital, fortunate for the City of Brooklyn. This letter commended Dr. McCorkle as a young man worthy of help and asked Dr. Armor to especially interest himself. After Dr. McCorkle finished his service in the hospital he opened an office on Clinton street, corner of Verandah Place. Practice came very slowly and what did come was of little pecuniary help. Shortly sickness made its appearance; the doctor was stricken with typhoid fever. Drs. Armor and Skene took care of him and some of the students of the college took turns spending the night with him. He lay in a little hall bedroom on Verandah Place. When the doctor recovered from his illness he was in financial straits, the future was exceedingly dark, and completely discouraged he determined to return to Ohio. He packed his belongings and with satchel in hand started for the train. On his way he stopped at the hospital to say good-bye to friends. Fortunately, he met Dr. Armor on Henry street, who asked where he was going. The doctor told him. Dr. Armor recalled the Ann Arbor letter. He gave him a patient to care for and sent him back to his office—thus securing Dr. McCorkle to Brooklyn. Shortly a position in the Health Department for a year helped make things possible. Meantime practice increased and in a very few years he was very busy.

Dr. McCorkle's connection with the hospital of this institution was continuous. Following his internship came a medical chair in the dispensary, then assisting visiting physician, then full visiting physician—the duties of which he performed up to the time of his death.

The same statement may be made as to his college connection. In 1876 we find him holding a quiz in medicine under faculty auspices. The same year he was teaching physical diagnosis followed by a lectureship on "Diseases of the Kidney." In 1880 he became professor of materia medica and therapeutics which he continued to teach until 1885; when he was appointed professor of principles and practice of medicine and of medical clinics. This position he resigned last year but no action was taken. The doctor was dean of the college faculty for some years until in 1904 he was made president of the college. Various other hospital honors came to him, such as consulting physician to Kings county, Norwegian, St. John's and the Jewish hospitals, besides several minor institutions. He was connected with various medical societies of the city, county and state and was president of the Kings County Medical Society in 1884 and 1885. He was a member of several social clubs but made little use of them. He was not a club man—he was too busy. The doctor got his pleasure out of work.

At a gathering like this we are permitted to mention intimacies and characteristics which might be in bad taste in a more formal meeting. This is a family conference gathered about the family hearth, reviewing the influences and life work of an older departed brother.

My acquaintance with McCorkle began in 1847. From the early eighties we have been closely associated in the medical work, both of the college and hospital working side by side the greater part of each year for nearly fifty years. During all that period there has never been the slightest misunderstanding. The association grew into a very close intimacy which is one of the most valued possessions of my life. Personally I not only feel that that I have lost a friend but a very dear brother. Our friendship, however, is a very gratifying consolation.

As a teacher, the doctor began shortly after leaving the hospital and continuously all these years up to the end taught medicine and its allied branches. Hundreds of successful doctors can testify as to his efficiency along these lines. The admiration and enthusiasm of students was always impressive. Dr. Armor used to say of him "He had the teaching diathesis, possessing the faculty of putting horns on a subject to hang facts upon; thus making it easy for the student to remember the lesson."

Dr. McCorkle was a very systematic man in all his habits of life. This was true of him, physically and mentally. The regularity with which he did things was hard to understand in one so busy and with so many demands upon his time. Everything had its time and place for doing. This same characteristic prevailed in his teaching. He was very methodical. The subject under consideration was analyzed and each step followed in such succession that a vivid picture was the result. The important facts were emphasized in the clear, pleasing tones so characteristic of the doctor. The student left the classroom with something to hold on to, not obscured by generalities or verbosity.

His bedside teaching was very instructive and practical. The doctor was a close observer and an exceedingly skillful diagnostician. He thoroughly believed in teaching medical students those things which would be of use to them in their subsequent work. Such teaching his students got in the wards of the hospital. An hour spent with him at the bedside was always a profitable hour. He loved his work and gave his pupils substantial, useful and practical instruction. His classes loved and respected him. Graduates of years ago still love and respect him and are as enthusiastic as on the day of graduation. Such can be the experience only of the successful teacher.

Dr. McCorkle was devoted to the Long Island College Hospital. Her interests were his, her prosperity his. Any criticism hurt him more than if directed to him personally. In matters pertaining to this institution I knew the doctor's mind very intimately; and in all this time he never came to any conclusion or took any action which he did not conscientiously believe to be for her best interests. He was ready to work for Long Island at all times, in season and out, during work time and vacation season. I have known him to shorten a much-needed vacation to secure a possible benefit to college and hospital.

The doctor was a very modest man—a very diffident man. It was a very hard matter for him to ask help from anyone, yet he did it repeatedly for Long Island. To him, more than to all other influences combined, do we owe the institution as she stands today. The Maxwell Central building and wing, the Arbuckle Memorial, Herriman Memorial, all testify to the great generosity of the donors: besides these, several endowed beds and smaller benefactions.

We offer our appreciative thanks and respect for them all. What was it that brought thse generous impulses into activity? It was the personality, the esteem and love in which he was held, the enthusiasm of Dr. McCorkle. Testimonials they are to other virtues than simple generosity. The doctor's interest in all pertaining to the institution, her present and future prospects, persisted to the last. Even in his last days, feeble as he was, he would make inquiries regarding her. Certainly no Alma Mater ever had a more loyal son.

As a physician, Dr. McCorkle did an enormous work. Few physicians in the city have done a larger practice—none one with greater responsibilities. The doctor's personality was a very great asset. He was a large man, but well proportioned; of a personal appearance that would make him marked in a body of men, a pleasing, affable manner, a gracious, courteous way of meeting people, a sincere dignity which carried with it confidence. The doctor was a powerful man physically. He never seemed to tire. He was always ready for his work, night and day. He took a personal interest in every patient. This interest was sincere, not assumed. It was part of the doctor's nature—it was the man himself. I was oftentimes impressed with it as I knew him more intimately. His personality in the sick room was an important factor. He gave to each case careful, honest service, as good as was in him. His quiet dignity inspired hope. His sympathetic care invited gratitude. His skill encouraged confidence. His patients soon became his friends. They loved him—loved him as the old-time family doctor was loved. This was true of rich and poor alike, for he gave of himself to the poor as well as to the rich. Many an evidence have I seen of this fact. I know of no one whose patients were more loyal than were Dr. McCorkle's.

In addition to his private work the doctor did a very large consulting practice. The profession on all sides turned to him in serious cases. His skill, his helpfulness, his resourceful knowledge, his tact, the confidence and reassurance inspired by his words, the help he brought to patient and doctor in times of trouble are household knowledge to the whole profession. He was a great doctor and did his work exceedingly well. The City of Brooklyn owes him a debt it can never repay.

We shall miss him. Let us try to profit by his example. The talents entrusted to his care he used exceedingly well and undoubtedly he has received the welcome, "Well done, good and faithful servant, enter thou into the joy prepared for thee."

RESOLUTIONS OF CONDOLENCE UPON THE DEATH OF DR. HENRY J. McKENNA.

Passed October 19, 1916, by St. John's L. I. City Hospital Medical Board.

The second summons, within the year, to the Great Beyond calls another of our brothers.

Following thus close upon his most intimate friend and loyal colleague, Dr. Bumster, we are called to mourn the grievous loss of Dr. McKenna.

Called away in the noon-day of life, he had scarcely time to round out and perfect what we all had recognized as a most promising and brilliant career. Always eager, willing and anxious to be of service to St. John's, who can help but deplore his passing as a calamity to the Institution! One of its most familiar figures is suddenly effaced; one of its sterling devotees and enthusiasts is so unexpectedly withdrawn!

The hallowed precincts and the historic wards of old St. John's shall know him no longer in bodily presence, but the history of the Institution's earlier triumph and most notable accomplishments can never be adequately written without noting the name and the memory of Dr. Henry J. McKenna as one to conjure with.

And thus do we, the Medical Board of St. John's Hospital, in special meeting assembled, and burdened by a weighty and engrossing sorrow, beg to testify our regard for the devotion, and our loyalty to the memory of our dear departed member—DR. McKENNA.

Society Transactions

ASSOCIATED PHYSICIANS OF LONG ISLAND.

Minutes of the Fifth-sixth Regular Meeting.

The Fifty-sixth Regular Meeting of the Associated Physicians of Long Island was held at the Hotel Nassau, Long Beach, Long Island, Saturday, October 21st, 1916. The President, Doctor Roberts, presided and there were one hundred and seventy guests and members present thus making this one of the largest meetings ever held by the Society, as it was also, in every respect one of the most interesting. As the minutes of the June (1916) meeting had been published in the Long Island Medical Journal they were, by consent, not read.

The Chairman of the Membership Committee, Doctor Royal Hamilton Fowler, presented the following names of applicants, all having been endorsed by the Committee. These gentlemen were unanimously electd to membership by the Society.

Proposed by Dudley Roberts; John B. Zabriskie, 2103 Church Avenue, Brooklyn, L. I. C. H., 1894.

Proposed by S. Lloyd Fisher; Joseph Alexander Driscoll, 97 Park Avenue, Brooklyn, L I. C. H., 1908.

Proposed by James E. Cosgrove; Oscar Watson, 31 Bay 20th Street, Brooklyn, P. & S. N. Y., 1899.

Proposed by James Cole Hancock; Donald Maurice Gildersleeve, 11 Schermerhorn Street, Brooklyn, L. I. C. H., 1912.

Joseph S. Baldwin, 493 Classon Avenue, Brooklyn, Cornell, 1913.

Roderick Byington, 1851 Eighty-fourth Street, Brooklyn, P. & S., N. Y., 1900.

Charles A. Hargitt, 17 Schermerhorn Street, Brooklyn, Syracuse, 1908.

Maurice E. Connor, 1320 Carroll Street, Brooklyn, Bell, N. Y., 1897.

Harrison Willis, 569 Monroe Street, Brooklyn, N. Y. Hom., 1891.

William Peter Strain, 294 Broadway, Far Rockaway, P. & S., N. Y., 1906.

John F. Dick, 227 Sanford Avenue, Flushing, L. I. C. H., 1900.

Samuel Lawson Burton, 4 Church Street, Richmond Hill, Queens, Canada, 1900.

Harold Milne French, Freeport, N. Y. Hom., 1913.

Morris Renfrew Bradner, Long Island College Hospital, Brooklyn, University Penna., 1912.

The Chairman of the Committee on Public Health, Doctor Arthur D. Jaques, presented the following report:

REPORT OF THE PUBLIC HEALTH COMMITTEE

The past summer has been notable for the epidemic of Poliomyelitis. The National Government through the Public Health Service has co-operated with the State Department of Health, and with the Department of Health of the City of New York toward the control of the epidemic. Quarantines were established by the different communities, some more stringent than others, and at the direction of the State Health Department a general clean up was instituted in every community which has resulted in improved sanitary conditions on the whole of Long Island. The conditions on Long Island, outside of Brooklyn and Queens, became so acute that the State Department of Health, realizing that Dr. Overton was overworked and unable to respond to all of the demands being made upon him, detached Dr. Paul Brooks from another sanitary district, detailing him to the towns of Hempstead and North Hempstead. Also Dr. Turrell was appointed Sanitary Supervisor to act on the north side of Suffolk County. A sub-station of the State Department of Health was established at Roslyn Heights, through the help of a number of interested men and women and Dr. Caldwell was placed in charge. Laboratory facilities were provided and Dr. George Draper was placed in charge of a corps of diagnosticians. Later a branch was established at Southampton.

The work done by the men at the Laboratories was of the highest standard and deserves the commendation of this Association. Large demands were made upon the physicians of Brooklyn, Queens, Nassau and Suffolk and the ready response from them deserves much praise.

Your attention is directed also to the work in mosquito elimination. A large amount of work has been done by the Nassau County Mosquito Commission. Breeding places of anopheles have been located and eliminated in Manhasset, Plandome, Great Neck. Roslyn, Glen Cove and Woodbury; also two places in Baldwin have been taken care of. A systematic house to house canvass has been instituted by ten upland inspectors and hundreds of breeding places of the pipiens eliminated. About 500,000 feet of trenching have been dug on the meadows extending from Far Rockaway to East Rockaway and arrangements have been made by the Commission for about 700,000 feet of additional trenching from East Rockaway to Baldwins.

A decided diminution in the number of mosquitoes has been noted through the day and night collection made in sections all over Nassau County. Also malarial reports from physicians in the northern section of the county show a decided falling off.

A contract is being entered into, and a survey is being made to eliminate the breeding places in Great Swamp near Manhasset; also the Town Pond in Roslyn has been receiving considerable attention.

The organization of the Nassau County Commission has been completed and the work for the past season has been satisfactory.

The drainage work of Jamaica Bay, although a large proposition, is progressing. Plans are being formulated to secure legislation, during the coming winter, to provide for a mosquito Commission for Suffolk County.

Respectfully submitted,

A. D. Jaques,
Chairman.

The Treasurer, Doctor Edwin S. Moore, presented a short and very encouraging report, stating that the Society was quite out of debt and that there was a balance upon the right side of the ledger.

There being no further business the President requested Doctor Harris A. Houghton, Chairman of the Scientific Committee, to take the chair. The caption of the program for the Scientific Session was, "Symposium on Poliomyelitis." Doctor Joseph Charles Roper of Manhattan gave an interesting description of some of the work done at the Fifty-ninth Street Branch of the New York Hospital during the recent epidemic. Dr. Phebe L. Du Bois read a paper on "Laboratory Methods." Papers based upon "Clinical Experiences in the Epidemic" were read by Doctors Elias H. Bartley and Leon Louria of Brooklyn. Doctor Frank Overton of Patchogue presented a paper concerning "The Control of the Epidemic on Long Island" and Doctor Walter Truslow of Brooklyn one with reference to the "Prevention and Correction of Deformity" as a result of Poliomyelitis. These papers were interestingly and ably discussed by Health Commissioner Haven Emerson of Manhattan, Doctors Frederick Tilney, Jaques C. Rushmore, and Louis C. Ager of Brooklyn and Brinslow Onuf of Park Ridge, N. J. Lack of time made it necessary to omit further discussion which was unfortunate as there were doubtless many at the meeting who from their recent past experiences could have added much of interest and value to this most engrossing subject of Poliomyelitis. The papers with discussion will be found in another part of this issue.

Doctor Albert H. Brundage proposed a vote of thanks to our guests from Manhattan who added so much of interest to our meeting. The motion, duly seconded, was unanimously carried.

After a most satisfactory dinner the Society was entertained with a series of motion pictures taken in the European War Hospitals showing the "Latest operative procedures and new method of wound disinfection of Doctor Alexis Carrel," "Numerous types of functional disease contracted in trench life and the corrective exercises being used in restoration in the service of Doctor Sollier" and "Demonstrating advanced work in the plastic surgery of the face," by Surgeon Major Pont. These pictures were of the utmost interest to the large number who enjoyed them and they gave something of an idea, hardly to be gained in any other way except actual presence at the scene of action, of the horrors of war and the terrible wounds received in battle. They also gave an idea of the resourcefulness of the surgical world in keeping pace with whatever may happen to the physical economy. The pictures were described most interestingly by Doctor Fred Houdlett Albee of Manhattan who has had a wide experience in the surgery incident to the present European war.

Of no less interest than these wonderful pictures were the motion pictures of Doctor Albee's own operation for the grafting of bone.

The President appointed the following members to serve on the Nominating and Auditing Committees to report at the Annual Meeting:

Nominating Committee:	Frank Overton, Patchogue, Chairman.
	William B. Brinsmade, Brooklyn.
	Martin M. Kittell, Jamaica.
Auditing Committee:	Walter Truslow, Brooklyn, Chairman.
	Arthur D. Jaques, Lynbrook.
	Earl H. Mayne, Brooklyn.

The unanimous expression of approval was most gratifying to the President and Chairmen of the Scientific and Entertainment Committees all of who had endeavored so earnestly to make the meeting a success. The management of the Hotel Nassau co-operated, as usual, in every possible way to make our visit a thoroughly enjoyable one. Those who did not return in their own cars caught the nine sixteen train for home.

James Cole Hancock, Secretary.

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular meeting of the Society held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, on Thursday, April 6th, 1916.

The President, Roger Durham, M.D., in the Chair.

Program.

Report of Cases:

A. (1) Diverticulitis of the Descending Colon.
  (2) Chronic Ulcer of the Leg. .Epitheliomatous Degeneration.
  (3) Chronic Appendicitis.
Julius T. Rose, M.D.

B. (1) Examples of Carcinoma in the Young.
  (2) Late Sequels of Infections of the Gall Bladder. Patients.
  (3) Osteitis Deformans. Lantern Slide Demonstration.
Royale H. Fowler, M.D.

C. (1) Fracture of the Lesser Trochanter of Femur.
  (2) Congenital Deformity of the Foot and Leg.
  (3) Vicious Union of Bones of the Forearm.
Burr B. Mosher, M.D.

Paper: "Neoplasms of the Superior Maxilla." William H. Rankin, M.D.
Discussion opened by Charles H. Goodrich, M.D., J. Richard Kevin, M.D.

Diverticulitis of the Descending Colon.

Julius T. Rose, M.D.

W. J. M., age 55, American, formerly a Baptist minister, now a printer, walked into the Samaritan Hospital, of Brooklyn, July 9th, 1914, and was admitted to my service.

A. Family History.

(1) Father died at 60 of cancer of the stomach.
(2) Mother died at 57 of cancer of the face.

B. Previous History.

He had rheumatism five years ago.

He never has had any trouble with his digestion, nor has he been constipated.

C. PRESENT COMPLAINT

Ten days ago he had an attack of acute indigestion with chills, fever and sweats, with colicky, cramplike pains in the abdomen, especially on the left side, associated with obstinate constipation. His bowels did not move for five days. Finally, after he had taken 35 grains of cascara in tablets, he had a small bowel movement and felt better. On the second day of the attack he noticed a swelling on his left side, which was tender and painful. He said if it had been on his right side he would have thought he had appendicitis. He had felt tired and run down before the attack. He had no medical care from a doctor before going to the hospital.

On admission he had a temperature of 103-2/5, pulse 102, respirations 24. Physical examination was negative, excepting that in his abdomen, on the left side, in the neighborhood of the lower portion of the descending colon, was a hard, slightly-movable mass, apparently the size of an orange, which was tender on manipulation and pressure. There was no distention or rigidity. The blood count and urinary findings were within normal limits.

He was ordered to bed, ice bag to the side, and high oil enema every four hours with the hips elevated. Fluids, excepting milk, were allowed.

A few hard fecal masses were passed with the first enema, and the next morning he had a small, soft stool, and later large stools were passed. In twenty-four hours his temperature came down to normal, his pain greatly improved, and the mass diminished in size. He improved rapidly and went home on the fourth day, when I saw him in my office. There was a well-defined, rounded mass low down, over the descending colon, very hard and somewhat tender. I advised x-ray examination, which he consented to. I made a frank diagnosis of carcinoma of the descending colon to the patient, and told him an exploratory laparotomy was indicated. Following is the skiagraphic report:

July 16th, 1914 — x-ray findings:

Six hours after a *bismuth meal,* the stomach is practically empty. The bulk of the bismuth is in the ileum, which presents no abnormalities.

The *bismuth enema* outlines the colon well. The cecum and ascending colon are moderately dilated, but not excessively so. The upper margin of the hepatic flexure is flattened from pressure against the liver. The transverse colon presents no abnormalities. In the descending colon, at about the level of the left iliac crest, there is a diminution of the bismuth shadow when the bowel is filled under pressure, and when the pressure is removed, this area is contracted and contains numerous islands in which the bismuth is absent. This area is about three inches in extent. The remainder of the descending colon and the sigmoid present no abnormalities.

Diagnosis: A study of the x-ray plates of W. J. M. justifies the diagnosis of a new growth of the descending colon, at a point about on a level with the left iliac crest. The growth appears to be of the diffuse type and involves about three inches of the bowel.

On July 18th I again saw the patient and explained the report and again advised operation, to which he agreed. He entered the Samaritan Hospital again July 22nd and was operated upon on the 23rd. Through a left rectus incision, a mass, the size of an orange, was disclosed, involving the omentum, and descending colon in its lower half, inner side. Adhesions were freed and the omental attachment ligated and cut and the mass removed, leaving the colon fairly normal, excepting for a small ragged opening at the attachment of the inflammatory mass. The edges of this opening were trimmed and closed and then turned in by Lembert sutures of gut. A small portion of attached omentum was sutured over this repair. One cigarette drain was used and the wound closed in layers with overlapping of the fascia, using interrupted chromic gut. The pathologist's report was negative as to cancer. Fat infection occurred, necessitating the opening of the skin and fat, but excellent union resulted, and otherwise, his convalescence was uncomplicated. He was discharged from the hospital August 15th, 1914, his stay having been twenty-four days. The last time I saw him he was well and was back at work.

Chronic Ulcer of the Leg. Epitheliomatous Degeneration.

Julius T. Rose, M.D.

Mrs. M. De F., age 55, native of the United States.

FAMILY HISTORY shows no cancer or tuberculosis.

PREVIOUS HISTORY: She does not remember any serious illness. She has had this ulcer for twenty-five years. During that time the ulcer has been healed for short periods of time, never longer than the last time — for nearly two years.

PRESENT COMPLAINT: This present condition began two years ago, after hitting the leg against the corner of an ice box.

She was admitted to the Samaritan Hospital, of Brooklyn, June 18th, 1914, for ulcer of the right leg, but was not placed on my service until August 3rd, 1914. The area involved in the ulcerative process was quite extensive, occupying the front and sides of the middle third of the leg, and in the center of this area a mass of fungous granulations projected outward nearly an inch above the surface of the rest of the ulcer. The discharge was considerable and the odor very unpleasant. The ulcerated area was cleaned up with the curette on August 5th, 1914 and a section of the mass sent to the pathologist for examination. His report gave as a diagnosis epitheliomatous degeneration. In the meantime I had put her on potassium iodid, gr. x, t. i. d., and Hg. salicylate, gr. 1, by injection, once a week, and this treatment was continued for about four months. Vary satisfactory improvement took place. The foot was kept elevated. At first the leg was strapped with Z O adhesive plaster, and later tight bandages; either wet bandages or stockinet bandages were used. Local applications, such as unguentum ammoniated mercury, naphthalin crystals powdered, boric acid ointment, 25 per cent argyrol solution, etc., under the bandaging. On October 6th, while I was on a vacation, Dr. Graham successfully grafted a large part of the ulcer, using local anesthesia with novocain. I placed some more grafts November 8th; but the granulations over the area occupied at the beginning by the fungous granulation mass (about 1½ inches square) could not be brought to a healthy state, and probing finally elicited the fact that there was uncovered bone underlying the center. So, on December 5th, 1914, she was taken to the operating room after a preliminary hypo. of morphin, gr. ¼, atropin, gr. 1-100, and with a light anesthesia of chloroform, I removed the skin edge, and, with chisel and curette, removed the diseased bone of the tibia, which was rather spongy directly under the ulcer, but very thick and dense above and below. The specimen designed for the pathologist was lost. The growth of granulations over the greater portion of this bare bone area was phenomenal. I curetted some and sent them for examination, and the report came back Normal Granulation Tissue. On November 8th, by giving a few whiffs of chloroform, I was enabled to place enough Thiersch grafts to nearly cover the whole area. These took very nicely and there was left only a small, deep pocket in the bone. I placed some small grafts, partly covering this area, on January 7th, 1915, and on January 21st, 1915, she was allowed to go home practically healed. I saw her about a week later and this small area, about the size of a twenty-five cent piece, which was the last to heal, and was formerly the site of the malignant mass of granulations, did not look right. It seemed to be lifted up and felt unstable. I curetted out the pocket and tried for two months to make it healthy, but lost ground; it extended in the bone and under the skin edges, and finally I confessed that it was a hopeless task to heal the condition, and advised amputation. She re-entered the hospital on April 25th, 1915, and I amputated her leg April 26th, making a bilateral hooded flap incision (Stephen Smith), leaving the semilunar cartilages and patella in the end of the stump. She had an uneventful convalescence with primary union, going home May 17th, three weeks after the operation. She has been fitted with an artificial leg which is fairly successful. She has gained about fifty pounds in weight.

Chronic Appendicitis. Acute Symptoms.

Julius T. Rose, M.D.

Mrs. P. O., age 36, German, was admitted to my service in the Samaritan Hospital, of Brooklyn, at 4:30 p. m., November 8th, 1915, having been sent in by her physician for immediate operation.

FAMILY HISTORY: Negative, excepting (1) mother died of tuberculosis at 31, (2) sister died of tuberculosis at 14, both sickness and death occurring while she was living with them.

MENSTRUAL HISTORY: Shows regular, 28-day type, with duration of 8 days. She had borne 5 children and miscarried twice.

PREVIOUS PERSONAL HISTORY: Negative, excepting several times she has had attacks of pain in the right side of the abdomen, extending from the ribs to the pelvis, and has lost weight during this time.

PRESENT COMPLAINT: She shows an attack, beginning three days ago, of right-sided pain, constant, but varying in intensity, and after taking a cathartic, worse, and accompanied by nausea and vomiting during the first night. The pain continued during the second and third days and when admitted to the hospital on November 8th, 1915, she had a temperature of 100, pulse 80 and respirations 30. I saw her about 8:30 p. m. She still complained of pain in the lower abdomen and right side and of headache. Her tongue was coated and she had a peculiar "catchy" type of respiration. She was thin, somewhat sallow, but did not seem to be very sick. Her abdomen was flat and soft. There was no ridigity present, though she was tender over McBurney's point, the cecum and ascending colon and right kidney region. The kidney was not felt. There was no tenderness over the gall-bladder area nor over the epigastrium. In the region of the appendix a thickening could be felt as of adhesions. Vaginal examination was entirely negative. The blood count was within normal limits. The urine was negative. An ice bag, and fluids excepting milk, were ordered.

She began menstruating the next morning (the 9th) and continued until the 14th. On the 10th she was given general fluids with milk, and an s.s. enema daily, p. r. n.

During the period of her menstruating she was not acutely sick, suffering no severe pain, and having no fever; but during that time she complained at intervals of the constant pain in the appendix region, also at various times of headache, backache, pain over the right kidney, in the epigastrium, general abdominal pain, and pain in the legs and in the right arm.

She was prepared for operation on the afternoon of the 14th and operated on in the forenoon of the 15th. The skin was prepared by McDonald's solution.

Through a right rectus incision, with muscle retracted inward, the cecum was palpated and a mass was disclosed, lying posteriorly, apparently about the size and shape of a hen's egg. The mobility of the cecum was quite limited by adhesions and bands. Careful separation of these allowed the cecum to be brought into sight and no appendix could be seen, nor could it be felt. The lower end of the cecum was apparently perfectly rounded, covered by peritoneum, and a mass was lying concealed in its posterior wall. A thick fleshy band extended from the cecum posteriorly downward to the broad ligament and contained a large, thick-walled structure, which I at first thought was a vein, and it was clamped and cut. The cut ends looked too thick for a vein, so then I thought it might be the ureter in an abnormal position. This worried me not a little, until, after a while, it was noted that it carried blood — not urine. After careful study of the junction of the muscular bands of the cecum, the ileo-cecal junction and the concealed mass, I took courage and made an exploratory incision in the most likely place, and, with considerable difficulty, dissected out of the center of the mass a small, white, S-shaped appendix, which was removed, and the stump inverted, the hard exudate making up nearly all of the mass not being disturbed, but care was taken to cover in bare areas with peritoneum. The abdominal wound was closed in layers, the anterior sheath of the rectus being overlapped by interrupted mattress sutures of chromic gut.

The patient had a very satisfactory convalescence, the wound healing by primary union. She was entirely relieved of her pain, and at the end of two weeks went home greatly improved.

Diverticulitis of the Descending Colon.

Julius T. Rose, M.D.

Dr. Mathias Figueira, in opening the discussion, said:

"Cases of diverticulitis are interesting to all of us, especially in the matter of diagnosis. It is through that that we ofen fail in these cases, and the case presented by the doctor to-night puts me in mind of a case I saw with Dr. Mosher last year. Is developed as a sub-acute lesion of the intestinal tract and in a few days it developed symptoms of intestinal obstruction with elevation of temperature, nausea and vomiting, distention and pain located on the left side, low down in the pelvis. There was no mass that could be found either by palpation outside or by examination through the rectum, and yet the lesion seemed to be there. I was called with Dr. Mosher to see the case and then the case was seen by one of the leading surgons of Brooklyn, and, singular to say, none of us ever thought of diverticulitis.

"I think that if we keep in mind the possibility of diverticulitis in all cases of pain on the left side with intestinal symptoms and inflammatory conditions, we will avoid a good many mistakes and I would have saved myself in this case if the thing had come into my mind, but it didn't, nor did it come in the mind of either Dr. Mosher or the noted consultant. We thought it was simply a case of intestinal obstruction due to malignant disease, like in this case, and the man died and on post mortem there was a diverticulitis of the descending colon. The diverticulitis was gangrenous, with adhesions into the pelvis and angulation of the gut, producing obstruction, and yet none of us thought of it. If by chance any of us had kept in mind that diverticulitis is a thing that may be present under such conditions the story might have been a different one, and in making diagnoses if the idea comes once to your mind then you are safe, but the trouble is it doesn't and you go astray in your diagnosis."

Chronic Ulcer of the Leg. Epitheliomatous Degeneration.

Julius T. Rose, M.D.

Dr. Mathias Figueira, in discussion, said:

"In this chronic ulcer of the leg with malignant degeneration I am reminded of something which I want to call your attention to and it is this: in all cases of epithelioma we are impressed with the idea that chronic irritation stands back of it as a cause. Now, ulcers of the leg are very common and very chronic, and they present a chronic irritation if anything does; and yet I think that malignant degeneration of ulcer of the leg is a rare thing. If irritation is the cause of epithelioma, it seems to me that these cases ought to be more often the seat of malignant disease than they are. I don't know how to explain it. It just came into my mind."

Diverticulitis of the Descending Colon.

Julius T. Rose, M.D.

Dr. Julius T. Rose, in closing the discussion, said:

"I would like to say in my own defense that I didn't exclude the question of its being a diverticulitis, but I was laying relatively too great stress upon the fact that the man had a history of cancer, both on his father's and his mother's side, and the fact that so oftentimes in men of his age the first symptom of obstruction means cancer in that region, and I did think of it and told him that there was a slight chance that it would turn out to be something of the nature of a diverticulitis or even an appendix of his left-hand side."

REPORT OF CASES BY DR. ROYALE H. FOWLER.

Carcinoma in the Young.

De Royale H. Fowler.

Case I. Carcinoma of the Rectum—diffuse peritonitis. P. W., age 15, was seen November, 1907. Chief complaints were pain in the rectum and abdomen. The patient had been in good health until somewhat less than one year ago, when he lost his appetite and had cramplike pain in the abdomen. Six weeks later the stools became tinged with blood, bowels had previously been constipated. There had been marked loss of weight, no vomiting, cough, urinary or other symptoms. His condition grew rapidly worse. Our examination on admission under ether revealed an inoperable condition. The boy was in a pitiful condition and suffered in addition from multiple bed sores and a para-rectal abscess. The patient's mother died of cancer of the stomach.

Clinical findings — Blood examination. Leucocytosis 19400, poly. 83%, temperature varied between 98 and 102, the pulse between 120 and 144. The patient died in a few days after admission. The autopsy by Dr. Zinsser revealed the body of a very much emaciated boy, with extreme edema of both lower extremities below the knees. Both feet were enormously swollen. There were numerous bed sores at various bony points. Above the anus and around it there was superficial ulceration of the skin, and on the left buttock, one-half inch from the anus there was the opening of a sinus, leading into the ischio rectal region which exuded pus. Upon inserting the finger into the rectum a hard ulcerated mass was felt 3 x 4 cm. about 6 cm. from the anal opening. External genitals normal. Superficial, axiliary and cervical lymph nodes enlarged. The inguinal were three times the normal size. Lungs showed old tuberculosis scars at both apexes, organs edematous, slightly congested at the base, bronchial lymph nodes slightly enlarged, left bronchi exuded pus. Heart wall of the left ventrical was thin, considerable atheroma above the aortic valve. Upon opening the peritoneum thick grumous pus was encountered. The liver was congested, showed marked perihepatitis and slight amyloid and fatty degeneration. Kidneys were embedded in soft, purulent adhesions, in which the capsules were involved. Intestines, large and small were matted together by fibrinous and purulent adhesions. Serosa lusterless and covered with fibrin, mucosa intensely congested. Mesenteric lymph nodes slightly enlarged. The rectum was imbedded in a thick mass of new growth, firmly adherent to the walls of the pelvis. This mass had infiltrated and displaced the muscles of the pelvis and had grown through the sacro-sciatic foramen. The entire region was burrowed with inter-communicating sinuses which were filled with pus. The wall of the rectum was so infiltrated that slight tension tore it, no perforation of the rectum. Miscroscopic diagnosis by Dr. V. C. Wood adeno-carcinoma of the rectum.

CASE II. MAMMARY CARCINOMA, recurrence and metastasis. Bessie M. Russian, Hebrew, age 20, was admitted to the Kings County Hospital during the service of Dr. Bogart on September 17, 1914. Patient first noticed a growth in the breast when 17½ years of age. She was married at 19 and immediately became pregnant. The growth was observed to increase rapidly at this time. At the Mount Sinai Hospital in February, 1914, pregnancy was terminated and radical amputation of the breast performed by Dr. Berg. Microscopic examination showed scirrhus carcinoma. Multiple incisions were made subsequently in the axillary flap for drainage. Following operation she felt well until nine weeks prior to admission to the Kings County Hospital when she first noticed pain in the right knee which radiated to the thigh and hip. She also felt pain in the right shoulder. It was worse at night — the pain in the shoulder was more severe. There was loss of appetite, sleep, weight, and marked weakness, occasional vomiting, and constipation.

Physical examination on admission showed the patient to be a young Jewish girl of medium frame, skin and mucous membranes of fairly good color. Posterior cervical glands were palpable, the right superclavicular space was more prominent than the left. On the right side of the chest there was a scar of a radical amputation of the breast, much thickened throughout its entire extent. Below and external to the main scar there were numerous smaller ones about one-half inch in length. These were also hyperthropied. High up in the axilla there is a small reddened papule suggesting metastatic malignant disease. In the axillary line there was a similar reddened papule in a small hyperthrophied scar.

Left Breast: There was a hard diffuse swelling at junction of third rib with sternum (upper inner quadrant). Somewhat movable and of indefinite dimensions, not tender. Overlying skin uninvolved. There was a scar in this situation which felt nodular. Palpation of the axilla on this side showed moderately enlarged glands along the upper border of the pectoralis major.

Heart, action regular, fairly strong; displaced or enlarged slightly downward; no murmurs heard. Lungs, negative.

Abdomen: Liver and spleen apparently not enlarged. No masses or tenderness. There seemed to be a slight resistance just below and to the right of the umbilicus.

Genitalia: External, normal. Cervix, small, stellate scar, in axis of vagina. No adnexal masses felt. Body of uterus retroverted. Not enlarged. Drawn over to patient's right.

Extremities, negative.

Reflexes, negative.

Mentality, good.

Laboratory Reports: Wassermann, negative. Gonococcus fixation, negative. Urine, routine examination negative. Gastric contents: Total acidity, 15; free hydrochloric acid, 5; organic acid and salts, 5.

A small papule was removed under novocain anesthesia and sent to the laboratory. An area of scar tissue was also removed for diagnosis.

Pathological report by Dr. Terry, Scirrhus carcinoma.

Radiographs of the right shoulder and thorax showed hazy areas of infiltration in the head of the humerus and left side of the chest very suggestive of metastatic carcinoma.

The patient was discharged at her request October 9, and was readmitted November 14, 1914, complaining of headache, vomiting, pain in the chest and hoarseness. Pain was severe and situated on the left side of the thorax. The left breast showed a large crusted ulcer. The pulse was rapid, irregular, and of poor quality and required active stimulation. The respirations were rapid and shallow. The patient was in very poor condition. Temperature 98 deg., pulse 120, respirations 28. She became progressively weaker and expired November 16. No autopsy permit obtained.

SUMMARY: In the second case reported we observed a young girl, who when seventeen and one-half years of age, first observed the mammary tumor, which grew rapidly following pregnancy, one and one-half years later. At nineteen she was subjected to radical amputation of the breast. Our studies, six months later, revealed recurrences in the main scar, as well as in the multiple scars, resulting from incisions for purposes of draining the axillary flap. There was invasion of the opposite breast, enlargement of the axillary lymphatics upon that side, and untastasis in the left lung and right humerus. She died in less than nine months following operation, or in less than eighteen months after the tumor was first observed.

Complete Congenital Atresia of the Ileum.

Baby Tillman was born of American parents in the Greenpoint Hospital, service of Doctor F. C. Holden, March 21, 1916. The delivery was normal and easy, no forceps. Weight at birth about seven pounds.

Vomiting began about fifteen minutes after delivery; vomitus was green, flaky and thick, without special odor. It continued several times during the night and the following day. The abdomen was slightly distended and tense. No visible peristalis, no masses seen or felt.

Rectal examination — The rectum easily admitted the little finger; no obstruction or masses. Genitalia, normal.

March 22, 1916 — vomiting still persists, of same character. An S S enema resulted in the return of a small amount of clear fluid. An intestinal cast was expelled from the rectum, about 6 inches long and ¼ of an inch in diameter, consisting of meconium and mucus. Later a colonic irrigation was given. Four ounces of fluid entered the rectum. A considerable amount of greenish, black meconium and mucus was later found upon the diaper. Several gastric lavages showed the washings consisted of the same greenish colored material.

March 23, 1916 — patient has continued to vomit the same greenish material; the abdomen is more distended than yesterday. Consultation operation advised. Transferred to surgical service. Conditions considered were duodenal atresia, hypertrophic pyloric obstruction. The obstruction, however, appeared rather as a low obstruction.

Operation at the age of 27 hours. Right rectus incision. A large amount of thin, free serous fluid escaped upon opening peritoneum; small intestine presented; was of dark color and enormously distended. This loop of gut was blind and free. The bladder was full; stomach was distended. No stenosis or change in pylorus or duodenum. No atresia of sigmoid on rectum. A hasty search failed to reveal the lower end of the small gut. The upper free end of the small intestine was sutured to the peritoneum. The abdominal wall closed in layers about protruding gut. Enterostomy performed by theromocautery.

Post operative notes — March 24, 1916 — pulse rapid and weak, baby cyanotic, saline hypodermoclysis 2 ozs. given every two hours. Refuses to take breast. Considerable greenish brown discharge from the enterostomy.

March 26, 1916, vomited several times during the past two days. An abundant foul greenish discharge continues from the intestine. Pulse is rapid and weak, low tension. Feet cold and clammy, cyanosis marked.

March 27, 1916, has continued to vomit and grown markedly weaker. Profuse discharge from intestine persists. Died.

Bone Cyst.

A. C., an Italian girl, age five years, was admitted to the Greenpoint Hospital March 20, 1916. About one year ago the parents had noticed a swelling on the right index finger. This came on spontaneously without history of injury. It has been growing progressively larger during the last six months. There is no pain. The family history is negative and the past history unimportant.

Examination reveals a young girl in good health. Head, eyes, ears, nose negative. The teeth are in poor condition, the tongue coated and the tonsils swollen and reddened. Neck, lungs, heart, lymphatic system, and abdomen negative. Extremities. There is a hard, smooth swelling, the size of a hazel nut, attached to and springing from the outer aspect of the proximal phalanx of the index finger just distal to the metacarpo-phalangeal joint. It is not tender, no restriction of joint movement. The overlying skin is normal and shows no increase in surface temperature.

The child's parents refused operation and the patient was removed from the hospital on March 28, 1916. The social service worker is aiding us in tracing the case.

Osteitis Deformans. Report of a Case.

There are scarcely more than two hundred cases of this rare disease of bone on record. It was first described by Sir James Paget in 1876. He contributed twenty-three cases up to 1889. Wilks in a careful study of these excluded one case. In 1910, Higbee and Ellis collected 158 cases. Four years later, Dacosta, Funk, Bergeim and Hawk added fifty-five cases. During a period of seven years, in 38,000 admissions at the Jefferson Hospital in Philadelphia, there are but three recorded instances of this disease.

The writer was privileged to study the following case while associated with Dr. J. B. Bogart at the Kings County Hospital.

Thomas D., laborer, born in Germany, age fifty-three, was admitted to the surgical service on Nov. 6, 1913, complaining of ulcers on the shins and pain in the legs. Attention was first drawn to bow legs by his friends about ten years ago. This has become gradually aggravated. He, himself had noticed no bony deformity, but when questioned in regard to the size of his hat, stated that the one he wore last year is now too small. He has experienced severe constant pain in the legs for six months. He has had an itching eruption for six months about the anterior chest, ankles, knees, elbows and scalp. The patient states that about ten years ago he struck his shins, since which time he has been troubled with ulcers which would heal for a time and subsequently break out again. He has had "Rheumatism" for ten years. Venereal disease denied. As a child he had Measles and Whooping Cough. He drinks three or four glasses of beer daily. The family history is irrelevant.

Physical examination reveals a fairly well nourished and muscled middle-aged male of large frame. As he stands nude conspicuous features are: multiple superficial tumors, the bow legs, wide pelvis, long arms, prominent clavicles, and moderate dilatation of superficial veins of upper arms, lower arms and chest. Head. Scaly eruption on scalp as described below. Measurements: Circumference 23½ inches. Biparietal 6½ inches. Occipito-frontal 8 inches. Occipito-mental 8 inches. Thyroid gland not enlarged. He is slightly deaf. Pupils equal and react to light and accommodation. Tongue coated, teeth poor. There is marked deformity of both clavicles. They are enlarged, thickened, and show an increased curve, convexity forwards. The right is more prominent than the left. An eruption as noted below is present on the anterior chest. The lungs are clear. The heart shows hypertrophy of the left ventricle. A loud blowing systolic murmur is heard at the apex, transmitted to the left. Action irregular. The liver percusses small, otherwise the abdomen is negative. Extremities. The femora are bowed, convexity outward, the legs are bowed laterally as well as anter-posteriorly. Note the excessive length of the arms. Measurements of the pelvis: interspinal 11½ inches, intercristal 14½ inches, intertrochanteric 14½ inches. Total length of the lower extremities from the anterior superior spine of the ilium to tip of internal maleolus 35¼ inches. There is a soft lobulated tumor above the left elbow posteriorly. It is freely movable. Many other small, putty-like tumors, the size of marbles are situated along the anterior aspect of the left arm. Some are harder than others, some regular in outline, some lobulated. A large, irregular, lobulated one is situated on the posterior aspect of the right thigh. It, contrary to its fellows is attached to the skin. The overlying skin shows enlarged veins.

An eruption, consisting of irregular, reddish-pink, rather definitely outlined patches, covered with silvery scales is located on the scalp, anterior chest, outer side of the left elbow, outer, anterior, and inner aspects of the left knee, inner aspect of the right knee, and inner aspect of both ankles. There are small superficial varicose ulcers ½ by 1 inch over the shins of both legs surrounded by purplish poorly nourished skin. There are a few dilated veins in the vicinity. The genitals are normal, the pubic hair is scanty.

Laboratory reports. Six routine urinalyses showed nothing abnormal. Blood and spinal fluid showed negative Wassermanns. Unfortunately the laboratory was not equipped for studies in metabolism.

Since leaving the Kings County Hospital, the patient has suffered intense, migratory pains in the back of the head, thighs, legs, wrists and fingers. The patient passes sleepless nights on account of the pain. He is unable to walk more than a few blocks without tiring. For the past eighteen months he has been under the care of Dr. E. M. DeCastro who states that upon one occasion there was cardiac decompensation with marked swelling of the limbs.

When the patient was examined by me April 3, 1916, after an interval of twenty-eight months measurements in general show an increase in size of the skeleton. The clavicles appear more prominent. The circumference of the head is now 24 inches (an increase of ½ inch). The biparietal is 6½ inches. The occipito-frontal is 8½ inches (an increase of ½ inch). The occipito-mental is 8½ inches. Pelvis shows a more marked increase. The interspinal is 13½ inches (an increase 2 inches). The intercristal is 16½ inches (an increase of 2 inches). The intertrochanteric is 14½ inches. The total length of the lower extremities shows an increase of 1¾ inches (37 inches). Previous height and weight not recorded, present height 5 feet 9½ inches, weight 194½ pounds. Blood pressure 130 Mm.

Through an oversight, microscopic study of the multiple tumors was neglected when a patient at the Kings County Hospital. Recently a small characteristic growth was removed under novocain anesthesia and pronounced by Dr. E. B. Smith, to be lipoma.

A growth similar to those previously described has appeared in the outer and lower quadrant of the left breast. The varicose ulcers are now healed. The eruption persists as previously noted, except that it has disappeared from the scalp and region of the left knee. The superficial sinus of the chest and arms appear to be more prominent.

Dr. Chas. Eastmond then demonstrated a series of lantern slides illustrating the lesions in the cases of osteitis Fibrosa Cystica and osteitis deformans. In the course of his remarks Dr. Eastmond said:

The youngest authenticated case of mammary cancer, which I have been able to find in the literature, was reported by Bloodgett, in a boy twelve years of age. Bryan also reports a case in a boy five years.

Instances of carcinoma in other situations in youth are not lacking, it has appeared in almost all favorite sites of the adult.

In closing Dr. Fowler made the following comments:

The cases of carcinoma are of interest on account of the youth of the patients and the rapidity of growth. Carcinoma is not commonly observed in such young subjects. When it occurs in the bowel it is most frequently encountered in the large intestine, the sigmoid usually being credited with the site of predelection. Twenty-one cases of carcinoma of the large bowel, occurring in young subjects, have recently been reported by French observers; of these nine were in the caecum and twelve in the sigmoid; two cases were under ten years of age; eleven were under twenty, and seven were under twenty-five. Thirteen cases occurred in males. In these the disease progressed rapidly to a fatal termination. In all but two cases seven or eight months elapsed between the first signs of trouble and death.

In regard to the case of Osteitis Deformans, interest centres especially in the etiology of this rare disease. It is to be noted that about 67 per cent occur in males, and 7 per cent show family involvement indicative of heredity as a factor. Elsna and Kutscha deny that syphilis is a cause in uncomplicated cases. There is little to justify the belief that bacterial infection is to be regarded as a predisposing cause. The neurotrophic theory is based upon the analogy found in certain bone dystrophies and nervous disorders. It is not held, however, at the present time that the lesions of Osteitis Deformans are dependent upon changes in the nervous system.

Dacosta and his co-workers have recently concluded from exhaustive studies in bone metabolism of this disease that the disorder is due to a lack or perversion of some internal secretion. There is much in favor of this theory. Gigantism and Acromegaly are examples in which bone metabolism would appear to be dependent upon some such lack or perversion of the secretion of the pituitary gland. MacCallom and Voegtlin have demonstrated that the removal of the parathyroids is followed by an increased elimination of calcium. The osseous lesions of cretinism, in which the thyroid is concerned offer an hypothesis in regard to Osteitis Deformans. The detailed studies of bone metabolism in an early and late case made at the Jefferson Hospital by Dacosta and colaborators may throw new light upon the cause of this disease. In this advanced case, there was a marked retention of calcium, magnesium and phosphorus, which is thus the reverse picture to a certain degree, seen in osteomalacia. The marked retention of calcium, the principal element concerned in bone growth, may be related to the abnormal deposition seen in the skeleton. Available analyses tend to support this in that the increased development of bone or bone-like structure in Osteitis Deformans is accompanied by calcification of these parts.

Every available opportunity should be utilized for the intensive study of this disease along these lines. I hope to report these studies at a later date.

Osteitis Deformans. Lantern Slide Demonstration. Patient. Bone Cyst of Phalanx. X-rays.

Royale H. Fowler, M.D.

DEMONSTRATIONS OF X-RAY PLATES BY CHARLES EASTMOND, M.D.

This is a slide of the case of multiple cysts which Dr. Fowler reported. We find here a large cyst, here a second one with a small margin that has broken out and extended toward the periphery of the bone, and these are additional small cysts which have begun to form at this point here.

In regard to the question of osteitis deformans, I am surprised that there have been only 200 cases reported because the condition is not rare. I have seen six cases and this last year we have had two additional cases reported at the New York Röentgen Society, so in a small group right here in Greater New York we have had eight cases in a comparatively short time.

This is a photograph of the man you just saw, and this is a view from behind, showing, not only the curving of the legs, but particularly the enlargement of the calves.

I might say that this is the first time that I have seen these slides in a lantern since Dr. Fowler had them made at the Kings County Hospital. On the original we are able to see along through this region, a very marked thickening of the cranium, and in the lower occipital region you will note that he has particularly the degenerative changes which have occurred. Here we have all the enlargement of the humerus with its marginal enlargement. The medullary canal does not appear on the slide. That is usually narrowed, but the characteristic point is the marked thickening of the cortex without a corresponding narrowing of the medullary canal. That is a differential point from syphilis. Above here we have evidences of an area of degeneration. This is the other arm. Here we find irregularity in the margin, degeneration occurring at this point, and thickening along this area. I don't see any changes in the radius. I don't know whether you can see anything there or not. The only change that was shown in the original plates was the slight thickening of the left radius. The other one and the ulna are not involved. The hands seem to be quite free. We have a slight amount of degeneration at this point (this is evidently an old condition) — a little central rarefaction through here and here. On this femur we see— it doesn't give the whole thing — but the femur was enlarged from the original overgrowth and thickening of the cortex. On the lower portion of the femur, however, we see that the diameter is out of proportion to the size of the condyles, and, again, there is an area of thickening through here. It is too bad that the medullary canal does not show as it is interesting to note that the enlargement of the bone is cortical enlargement without a corresponding enlargement of the medulla. As regards the feet, the only point I see there is the degeneration in the head of the metatarsals as compared with the other side.

Congenital Atresia of the Small Intestine. Color Photograph.

Royale H. Fowler, M.D.

DR. WILLIAM H. RANKIN, in discussion, said:

"A few years ago I reported a case of atresia of the intestine before the Long Island Society. It was a very interesting condition of affairs. The child died and I asked for the privilege of post mortem. It was found that the whole colon was about the size of a cord and there was no mesocolon. It was bound down in every direction. The very terminal end of the ileum was also involved in this atresia."

Osteitis Deformans. Lantern Slide Demonstration. Patient.

Royale H. Fowler, M.D.

Dr. Royale H. Fowler, in closing the dicussion, said:

"As regards Dr. Figueira's remarks, it would seem that he has confused the case concerning which I have been speaking, with arthritis deformans. I understand that the doctor was speaking of this form of arthritis, which, of course, has nothing to do with osteitis deformans.

"Since he has spoken of the theory that bacterial infections are possible causes in this disease, I wish to say that if one refers to an article by De Costa, which came out in the Publications of the Jefferson Medical College and Hospital, it will be found that various reasons are given from which he arrives at the conclusion that that theory has been discarded.

"I think there have been only two cases in which vaccines have been used with any degree of success. There was a slight improvement."

Paper: "Neoplasms of the Superior Maxilla." Patient.

William H. Rankin, M.D.

Dr. Royale H. Fowler, in discussion, said:

"Dr. Figueira has spoken of the gloomy results following the treatment of new growths of the superior maxilla. It all depends upon the type of growth and, to my mind, that is the crux of the situation. In other words, we want to know the type of growth with which we are dealing before attempting any operative procedure. Along the lines laid down by Bloodgood there is no question that giant-celled sarcoma in this situation is just as amenable to treatment as in the long bones. I have seen quite a number of giant-celled sarcomata while working at St. Luke's Hospital and I have seen a number cured by radium. Dr. Abbe has a splendid collection of models, which he has made, showing the disappearance of these growths following such treatment. He has a very nice little instrument, with which he removes a piece of tissue for diagnosis. It is similar to a little apple corer, with a serrated edge. He forces it through a small incision in the growth and turns it around and bores out a little piece which he sends to the pathologist.

Exhibition of Various Apparatus.

Burr B. Mosher, M.D.

My reports will be very brief, but, if there are no objections, before taking up the cases that I have been marked to report, I would like to show a little spreader apparatus which we use in St. Giles' in conjunction with the Buck's extension. This is hitched up in this way, which, however, is not the better way. It is better to thread it through here and leave the two ends free and let this go through here (illustrating).

Quite a number of years ago Dr. Davis reported a brace for the drop foot with a one-sided support to be worn inside of the shoe. I had a lot of trouble with this breaking away, the ankle-bones being, of course, on a different plane (the malleoli). You couldn't turn the brace the same way and keep your axis on the horizontal. I think I was the first one to turn that forward, to go in front of the external malleoli, and the other one to go back of them. That was made not perfectly for the reason that it should have more motion, and it works inside of the shoe. Of course, nowadays they do more surgery than they used to.

There is nothing new in this thing. This is the so-called Jones' wrench. The only point about this is in the lock. I had it fixed this way, but I don't think it is as good as the original Jones. To adjust the lock in the original you couldn't move it to clean it. It got pretty dirty, but in this way you can.

Congenital Deformity of the Foot and Leg. Lantern Slides.

Burr B. Mosher, M.D.

This is a sort of congenital deformity showing the absence of the bones of one leg and of the foot. The child came into St. Giles' when about one year old and the x-ray revealed the absence of the fibula. Just what bones are trying to be developed in the lower part of the foot I do not know, but on coming to take a picture the other way whether this is our metatarsal or tarsal or what they are I do not know, but I just present them——. Of course, the fibula would not show anyway at this age. It doesn't show. I will pass them around if anyone cares to look at them.

Fracture of the Lesser Trochanter of Femur. Lantern Slides.

Burr B. Mosher, M.D.

The next case has been put down as a fracture of the lesser trochanter of the femur. It would have been better if it had been said to be a separation. Here is a boy of thirteen years making third base and, all of a sudden, gets in front when he tries to get up and finds he cannot walk. He cannot raise his leg. He was out in the country at the time and came in to me unable to flex the leg at all at the hip-joint. The x-ray showed that there had been a separation of the lesser trochanter. The question was as to what was the best thing to do for the boy. The matter of flexion was considered. The family rather wanted to try it and so long as the fragment came up here on the surface from which it was taken, I consented to let them try the expectant method and at the end of four weeks he began to use his leg and now uses it perfectly. The other is the x-ray some four months after. He has every motion. I don't think that a separation of that kind is a common injury.

Vicious Union of Bones of the Forearm. Lantern Slides.

Burr B. Mosher, M.D.

The next case I present, not because it is so unusual, but more to bring out a discussion as to what is the best thing to do with cases of vicious union coming on some four weeks after the fracture.

This man was treated by one of the best hospitals in New York City for a fracture of the forearm and I saw him at the request of his employer, who wanted to know what was the best thing to do with the arm. He was a man of fifty-eight years not in very good health, an engineer with a fair amount of use in the arm and able to undertake the work at which he was engaged and carry it on and the question was whether he should be attacked surgically or not at his age after four weeks. I advised surgical interference, but he refused, and he has the arm with some use, but there is a considerable disability and I was wondering what the Society would recommend in a case of that kind.

Congenital Deformity of the Foot and Leg. Lantern Slides.

Burr B. Mosher, M.D.

Dr. Walter Truslow, in discussion, said:

"That case has interested me very much indeed. That is a condition which one rarely sees and yet in the past year three cases, very similar to the one that the doctor reported, came under my observation, in each case an absence of the fibula and in each case associated with talipes. In one of the cases where it was double it was talipes varus on the one side and calcaneus on the other.

"The interesting part about the whole thing to me was in the method of treatment. The absence of the fibula included absence of the two lesser toes and of some of the bones on the outer side of the tarsus. I undertook the care of the child, from quite an infant, correcting the varus in graduated plaster of paris dressings. It wasn't difficult mechanically to do this. One could overcome the deformity. But with the absence of the bones on the outer side of the leg and foot there was absence of the muscles that should control that side, and I could find nothing that would hold the corrected position. I want to do muscle transplantation and hope I may yet have this opportunity.

"The other cases are still under care. In one of these cases, on the side on which the foot deformity was equinovarus, there had apparently been an intra-uterine fracture and re-union of the middle of the tibia with a bad angle, the angle pointing forward. That required cutting in and chiseling. The bone seemed to be quite hard for a little child and it was difficult to cut through the bone. There was also resulted in a marked contraction of the calf muscle requiring a tenotomy and then a considerable stretching of the tendo Achillis. That, mechanically, proved all right and the child got a straight leg and the foot was corrected. This is the same child I referred to a moment ago. When it came to walking age that foot was in pretty good shape. There was absence of some muscles, but there was not so much absence of the outer bones of the foot. In that case there was a pretty distinct history of syphilis on the father's side. I have looked up some of the literature. I understand this condition is found frequently in syphilis."

Fracture of the Lesser Trochanter of Femur. Lantern Slides.

Burr B. Mosher, M.D.

Dr. Walter Truslow, in discussion, said:

"Dr. Mosher spoke of this as a baseball accident and I cannot help reporting something which came under my observation quite a number of years ago when at a summer place. The city men had a Saturday afternoon game of baseball with the townsmen; and the catcher, at a certain stage of the game, undertook to 'throw out' at second base, a man who was running there. But the ball didn't reach second base. He broke his humerus in the middle third and was taken home and another man was substituted, who was his room mate. A little bit later in the game this catcher attempted to throw out at second base and he fractured his humerus in the middle third. I felt very badly about it because I was 'holding down' second base and was unable to make two 'put-outs.'"

Paper: "Neoplasms of the Superior Maxilla." Patient.

William H. Rankin, M.D.

Dr. Charles H. Goodrich, in opening the discussion, said:

"The discussion of a paper of such a character and quality as this instead of arousing the usual varied array of dissenting voices, is likely to resolve itself into a procession. Anything that we can add in the discussion is likely to be of minor importance compared with the ringing proposition which the doctor has set forth — that physicians are, in general, either not alive to the dangers of this trouble, or they lay too great stress upon and exaggerate the dangers of radical operation in these cases.

"The question, clinically, as to whether a growth is carcinoma, epithelioma or sarcoma is always an interesting one and in my own personal experience the clinical diagnosis most frequently made has been sarcoma and the microscopical diagnosis has usually been carcinoma or epithelioma. I would be very much interested to know, if Dr. Rankin will answer the question, whether the growth in the case he kindly showed us this evening was examined microscopically and so proven to be sarcoma.

"Some of the men who have been doing nose and throat work extensively and aggresively have made the statement that here, if in no other region of the body, it can be stated that sarcoma is a condition of the period of physiological development and activity and that epithelioma is a disease of the period of physiological retrogression. This we know does not hold in other portions of the body, but in my own personal experience all of the cases in advanced years have proved to be epithelioma, although in the majority of cases were originally diagnosticated as sarcoma.

"The doctor did not mention, in connection with the myeloid sarcoma, or the myeloma, as we now call it, that where it is secured in the stage of encapsulation, or soon after it has broken down, that the treatment with curettes and gouges will be sufficient and that it is not more malignant here in its tendency to return and its tendency to destroy life than it is in some of the long bones.

"I would say that in my own experience all of the cases which I have seen of malignant disease of the superior maxilla of the epitheliomatous type have been in men.

"It is interesting to contemplate some of the possible etiological factors which have been assigned, although these must be more or less theoretical. It happens that in the cases I have seen, as in the case of some of the cases that have been noted in the literature, epithelioma has occurred largely in men of advanced years who have been inveterate smokers of tobacco. In one instance a man was in the habit of working in the midst of chemical fumes. This, I presume, in the eyes of many, would be considered as following out the theory that irritation, more frequently than any other one cause, has to do with the provocation of epitheliomatous growths.

"If we would desire to make an early diagnosis in these cases we must look a little more keenly for malignant disease here than in some other portions of the body, and it seems that whenever we see a particularly-persistent disease of the antrum, persistent in spite of competent drainage and the treatment which usually brings about a complete recovery of antrum disease, we should be suspicious of a malignant growth and endeavor to make either a thorough examination, as the doctor has indicated in the paper, or to secure some material for microscopical examination.

"I wish to recall one case which I had the pleasure of observing in the last three or four years of the patient's life. This man, for over twenty years, had had antrum trouble and he prescribed his own periods of treatment. Whenever he had a painful time he would go to a nose specialist and have the antrum washed out once or twice, then he would be comfortable for several months and then go again. He kept that up for many years until finally there developed a growth which was found to be beyond cure when it was discovered. In this particular case it would seem as if long-standing antrum disease and real neglect, had something to do with causing of his new growth."

"Then we should be suspicious of every growth of the alveolar process, for here we see epithelioma and sarcomata develop and they are very frequently thought of as fibromata until a recurrence comes, and by that time there may have been an extension far beyond the possibility of complete removal, even though a complete excision of the superior maxilla may be possible. As these growths sometimes start on the internal or nasal surface of the superior maxilla, every growth in the nostril which bleeds easily should arouse our suspicion. Finally, a very painful, extraordinarily painful antrum which does not recover promptly in the face of competent drainage should be scrutinized closely with the thought that there may be malignant disease gathering therein."

Dr. Mathias Figueira, in discussion, said:

"I doubt very much whether in epithelioma or malignant disease of the antrum, once the disease has made a full start, anything short of radical operation will do, because even in the cases where radical operation has been done recurrences often take place. Two cases exemplifying this have been presented here during last year.

"In regard to the radical operation, I wish to say that I think the superior maxilla can be entirely removed without ligation of carotids.

"In the operation of resection of the superior maxilla, as generally done, an incision is carried from one-half inch below internal canthus, along naso facial junction, around nasal wing and through middle of lip, into mouth. Another is carried from canthus under orbital margin to molar. The cheek is dissected up from the bone, thereby opening cavity of mouth and allowing blood to flow freely into it and larnyx, exposing patient to danger of suffocation. This can be avoided by not opening into cavity of mouth until last stages of operation.

"The incision is carried from the nasal wing to the canthus and across, under orbital margin. The flap so outlined is dissected down from the maxilla to the fold of mucous membrane, but without cutting through it and opening cavity of mouth. All bone connections are severed so that maxilla is only held by connection of hard palate. At this stage, then, when hemorrhage has subsided, the incision is carried through the lip into the mouth, the mucous membrane is divided, the hard palate connection quickly severed and bone removed without much blood entering mouth. If, as the bone is removed, the cavity is plugged with gauze for a few moments, little blood will be lost. The Ross position will also be of great help."

Dr. John D. Sullivan, in discussion, said:

"The case which Dr. Rankin presented to-night called to my mind a patient on whom I operated some seventeen years or more ago, with a large bony tumor of the face. The patient was a lady about fifty years of age. The tumor had been growing for something over a year. The diagnosis was alveolar carcinoma. In that case we approached the tumor by a different route than Dr. Rankin did in his case. I was assisted by Dr. Walter C. Wood in the operation. The first thing I did was to extract a canine tooth. Then right in front of that point, Dr. Wood held both sides of the lip and I made an incision along up the side of the nose, across the orbital ridge to the outer side and dissected the cheek from the bone and turned it back. The tumor with the anterior portion of the maxilla was removed. The wound was packed, the flap brought back to its normal position and sewed there and the recovery was remarkably rapid and very satisfactory in every way. In fact, I was surprised with the facility with which the operation was done and the good result after the operation. I saw the woman some years afterwards. She had a very good mouth. She could eat well and did not miss that side of her upper jaw very much."

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

OCTOBER, 1916

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, OCT. 17, 1916.

The President, Dr. Ralph H. Pomeroy, in the chair. There were 200 present. The meeting was called to order at 8:55 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Anna C. De la Molte, 70 So. 10th St.; Cornell, 1900; proposed by C. E. Scofield; seconded by E. E. Cornwall; Apr., '16.

Wm. H. Donnelly, 178 Woodruff Ave.; McGill, 1903; proposed by S. J. McNamara; seconded by Membership Committee; Mar., '16.

Lamont H. Fisher, 1112 Dean St.; Univ. & Bell., 1916; proposed by J. J. Wagner; seconded by H. T. Peck; Mar., '16.

S. Lloyd Fisher, 2911 Clarendon Road; Jefferson, 1907; proposed by S. J. McNamara; seconded by Membership Committee; Mar., '16.

Philip Leibowitz, 1246 St. John's Pl.; L. I. C. H., 1913; proposed by C. W. Stickle; seconded by M. Lederer; Feb., '16.

Chas. V. O'Brien, 1560 73d St.; Syracuse, 1909; proposed by D. A. McAteer; seconded by J. J. Delany; Mar., '16.

Geo. A. Sheehan, 22 First Pl.; Fordham, 1913; proposed by J. S. Sheehey; seconded by Membership Committee; Dec., '15.

Nathan P. Thayer, 1433 Avenue, H; Harvard, 1905; proposed by E. Bishop; seconded by N. T. Beers; Jan., '16.

Applications for Membership.

Applications for membership were received from the following:

Samuel Goldman, 152 Hart St.; P. & S., N. Y., 1912; proposed by E. E. Cornwall; seconded by Membership Committee; Oct., '16.

Augustus L. Harris, 458 E. Parkway; L. I. C. H., 1914; proposed by Membership Committee; seconded by Membership Committee; Oct., '16.

Douglas B. Parker, 154 Clinton St.; L. I. C. H., 1912; proposed by D. M. Gildersleeve; seconded by C. P. Gildersleeve; Oct., '16.

Hans Siveke, Foot of Jay St.; Univ. Mich., 1913; proposed by Membership Committee; seconded by Membership Committee; Oct., '16.

Election of Members.

The following, duly proposed and accepted by the Council, was declared elected to active membership:

By Reinstatement.

Jacob M. Morin, 1115, Bergen St.; L. I. C. H; 1899; resigned former member.

Scientific Session.

Paper: "Why Not Treat the Gall Bladder as we do the Appendix?" By Richard Ward Westbrook, M.D.

Motion Picture Demonstration of Operations on the Gall Bladder. By Russell S. Fowler, M.D.

Discussed by Drs. Wm. F. Campbell, H. Beeckman Delatour, J. B. Bogart and Raymond Clark.

Paper: "The Sacro-iliac Joint in Accident Cases." By Arthur C. Brush, M.D.

Discussed by Drs. J. C. Rushmore and Walter Truslow.

New Business.

Dr. Earl H. Mayne reported that the Visiting Committee by unanimous vote recommended that Section 9 of Chapter 20 of the By-laws of the Medical Society of the County of Kings which reads as follows: "It shall be the duty of the Visiting Committee to visit the sick, infirm or invalid members of the Society" to be changed to read: "It shall be the duty of the Visiting Committee to visit and organize relief for the sick, infirm or invalided members of the medical profession resident in the County of Kings."

Dr. James M. Winfield offered the following amendment to the By-laws. "Any member who, from infirmity, finds it difficult to meet the Society's obligations may, if he so expresses his desire to the Council be continued from year to year as an active member without payment of dues."

Dr. William F. Campbell moved that Dr. Henry A. Fairbairn be appointed a committee of one to draw up a suitable memorial resolution to the late Dr. John Alva McCorkle. Motion seconded and carried.

The following resolution was presented by Dr. J. Richard Kevin:

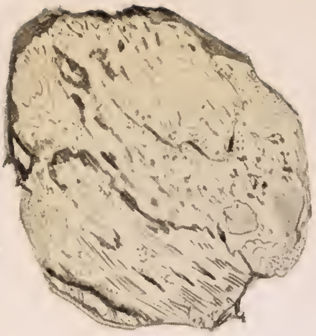
Be it Resolved:

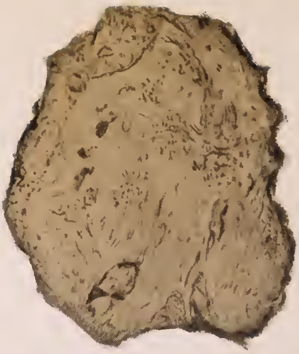
1st. That a special committee of ten be appointed by the chair for the purpose of recommending ways and means to bring about legislation to the end that more local powers be provided for the administering of the Department of Health in the Borough of Brooklyn.

2nd. That this committee report to this body its recommendations for legislation before January 1st, 1917.

Meeting adjourned 10:30 p. m.

Charles E. Scofield,
Secretary.





The first (light colored) specimen is a cross-section of a strand of plain Kalmerid catgut, highly magnified.

The second (dark colored) specimen is a cross-section of the same strand, reacted upon by ammonium sulphid to precipitate the mercuric element. The uniform color throughout the section shows the thorough permeation by the Kalmerid (potassium mercuric iodid). Such an equable distribution of the Kalmerid assures a supply of this germicidal substance in the tissues until the suture is entirely absorbed.

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SURGICAL CLINICS AND CLINICAL REPORTS IN HONOR OF DR. LEWIS STEPHEN PILCHER.

THE ORIGIN AND COURSE OF CHRONIC PERITYPHILITIS

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THERE is a group of cases in which the symptoms, which had been attributed to the irritation caused by a chronically inflamed appendix, persist, after the removal of that organ to the annoyance of the surgeon and patient alike. Forced upon the attention by the fact that the symptoms are unrelieved by operation, it is evident that conditions exist in the right iliac fossa which resemble chronic appendicitis in symptomatology but are due to other causes. The situation is complicated by the fact that almost all removed appendices are declared somewhat abnormal by the sympathetic pathologist and that complete relief of symptoms occasionally follows the excision of organs very slightly changed in gross appearance from the normal. This has led to increased interest in this region with the recognition and study of various pathological conditions associated with pain, constipation and digestive disorders.

The French recognized, nearly twenty years ago, a clinical picture which has been described under the term "Typhlo-colite" or "Typhlite ptosique." Dieulafoy pointed out that there were attacks of pain in the ileo-cecal region which had, he thought, nothing to do with the appendix but which signified the localization of a mucomembranous colitis in the cecum. The attack resolves itself into a severe seizure of pain about the cecum which lasts only a few hours and disappears quite suddenly. If the patient is examined during the attack it will be found that tenderness exists on pressure in the illiac fossa but that there is no rigidity. In many cases an elastic body can be felt which may vanish under pressure and appears to be the distended cecum. Vomiting may be present with a slight rise of temperature and a spontaneous diarrhea often ends the attack: more or less tenderness sometimes presists.

More recently the same condition has been described in Germany under the name of "Cecum mobile," or "Typhlatonie," etc.

In this country, Jackson, Flint and others have described the fine vascularized membranes found upon the ascending colon or cecum. "The membrane," Jackson says, "does not resemble the ordinary conception of an adhesion. It is never adherent to the abdominal wall nor to any contiguous portion of the small intestine.

Instead it resembles more closely than anything a thin pterygium. In recent cases the membrane is quite free and produces but limited restriction of the underlying colon. In more advanced and characteristic cases it seems to bind the colon close to the posterior abdominal wall and produces such marked angulations and convolutions of the colon as to practically produce a stricture of its lumen."

The *Theories* as to *Etiology* are three:

1—That it is congenital.
2—That it is mechanical—a physiological response to traction.
3—That it is inflammatory, either from a spreading peritonitis from points of original infection without or from infections within the contiguous gut.

The studies of Flint and of Eisendrath and Schnoor may be accepted as determining the congenital origin of these structures. "They originate," to quote from Flint, "after the rotation of the gut from the secondary fusions of the peritoneum when the cecum becomes attached to the posterior abdominal wall just over the kidney and under the liver. In some instances these attachments, usually confined to the posterior aspect of the cecum and colon, are excessive and extend out over the ventral surface of the first part of the large intestine resulting, with the subsequent descent of the cecum, in their being drawn in the form of a thin veil or membrane. In this process the blood vessels take part, a fact which explains the long unbranching course from their origin on the parietal peritoneum downward and forward onto the cecum or colon where they communicate with those of the intestinal wall."

Eastman called attention to "the striking similarity of the foetal peritoneal fold described by Jonesco and Juvara and designated by them the parieto-colic fold to the adult peritoneal anomaly described by Jackson as membranous pericolitis and generally known as "Jackson's veil," and also to the probable casual relationship between the bloodless fold described by Treves and a pocket-like anomalous peritoneal reflection which is not rare in the adult and which passes from the mural peritoneum upon the right side quite low down, extending upward and inward over the caput coli and vermiform appendix, to be attached to the last two or three inches of the ileum and to the peritoneum of the caput coli. It forms the boundary of a pre-colic fossa in which the cecal head and the appendix may rest, as in a pocket. It is likely that the caput coli with the appendix are not rarely, during operations for appendicitis, shelled out of this peritoneal fold, that is the bloodless fold of Treves, which forms the pocket, being looked upon by the operator as an affair of adhesion formation." He also at the same time called attention to the fact that, "Douglas Reid has described under the name Genito-Mesenteric Fold, a rather common foetal fold of peritoneum which passes from the terminal portions of the ileum into the pelvis" and connected it with the formation of the so-called Lane's kink, and frequent association of appendicitis and oöphoritis.

We distinguish the following anatomical forms of these veils or membranes:

1—The parieto-colic, in which the veil stretches from the parietal peritoneum at the hepatic flexure over the lateral and ventral surfaces of the ascending colon and cecum.

2—The parieto-cecal, which extends from the parietal peritoneum lower down, passes over the head of the cecum and may merge with the first type above.
3—The parieto-ileo appendicular, or fold of Treves.
4—The genito-mesenteric or ileo-pelvic.
5—The omento-colic, of Flint, which passes over the ventral aspect of the colon and is continuous with the omentum.

Eisendrath and Schnoor from observations during operations and from examination of ten foetuses, confirmed the position of Eastman and drew attention to the similar parieto-colic and genito-mesenteric folds on the left side. They reported a case which affords proof of the role which the Jackson's veil may play in the production of acute and chronic obstruction of the ascending colon and cecum. "We are not prepared to state at the present time," they write, "what causes this change in the peri-colic membrane from an innocent persistent foetal structure to the production of a distinct pathological entity." We may then consider the normal anatomy of the peri-colic folds as sufficiently established for us to advance their gross pathology and the nature of the process which brings it about. In a number of cases of acute appendicitis operated on during the attack the condition of the peri-colic membranes, which were present, have been observed. In many of these the veil was found edematous, somewhat thickened, pearly grey in color; and in several, small portions were removed for section and culture. The sections show round cell infiltration; and the cultures, a pure growth of colon bacillus. In all of these cases the peritoneum itself was not involved, and the process seemed to be a distinguishing symptom. Localized areas of injection and thickening were made out and from one of these the colon bacillus was isolated. It seems fair to assume that the contraction and band formation, which is found in later cases, are direct sequelae of this infectious process.

I have also observed four cases in which the process of veil contraction on the right side has been recognized at operation and at a later date symptoms have arisen which have been due to a similar process initiated on the left. These cases have also had more or less colitis. I think we may safely say that just as we know how acute infection spreads from the appendix behind the peritoneum, so it may be recognized that a more chronic inflammation in certain cases follows the same paths. This inflammation may be of short duration and followed by resolution, as may be seen if one notes conditions at operation in many catarrhal cases. It may be slowly progressive with remissions and exaccerbations and it may leave in its wake contractures and adhesions. There are cases in which a definitely progressive history is obtainable, beginning as a larval appendicitis, advancing through the stage of ileocecal disablement to the beginning of a chronic colitis with involvement of the splenic flexure and sigmoid in the peri-colic process. It seems fair, to some authors, to consider these cases examples of a descending colitis, and to charge the peri-colitic bands to infection through the epiploic appendages.

The disease may then be defined as follows: Chronic perityphlitis is a process characterized by the presence of areas of subperitoneal congestion, inflammation and cicatrical retraction accompanied by disturbances of ileo-colonic function, by catarrhal and croupous inflammation of the cecum and ascending colon and sometimes initiating a descending colitis and peri-colitis. The fact that these areas may be seen inflamed during an acute attack of appendicitis, that one or more of them are often seen inflamed, an exaccerbation of chronic right iliac pain and that most of them recovered completely after the appendix had been removed render it probable that the infection takes its rise most often in the appendix. The fact that some of them continue to give symptoms after the appendix has been removed calls for explanation. Is the continuation of trouble due to irritation from the scars of contractures unrelieved by operation or is it due to recurrent attacks of inflammation set up by infection in the terminal ileum, in the cecum, or in the ileo-colic glands? I am persuaded that each of these situations may furnish a nidus from which recurrent spreading infections may arise.

The terminal ileum is rich in lymphatic tissue, it is the site of ulceration in typhoid, in tuberculosis and perhaps more often than we now admit, of infections not yet recognized as specific. In a recent case a well defined ulcer with edges as indurated as the usual duodenal type, involved two-thirds of the circumference of the ileum from the ileo-cecal valve backward about two inches. It would seem, however, that this tvpe of disease must be rare.

The ileo-colic glands are not infrequently found quite distinctly involved in a definite group of cases of appendicitis, most often observed in children and adolescents. These cases occur as an immediate sequel of a tonsillitis. On the second, third or even the fourth day of throat infection abdominal pains and vomiting begin. The temperature is usually rather high, 103 to 104° F, and as the general abdominal pain and tenderness becomes localized it is often possible to recognize that it is somewhat higher and nearer the navel than the usual site of appendicular distress. Some of these cases go on to suppuration or gangrene, but most of them subside with rest. If such a case be opened in the catarrhal stage one finds that the glands in the ileocolic angle are much enlarged and that this is much more noticeable than the involvement of the appendix which may even appear nearly normal. There will be found, however, the same retroperitoneal injection and edema that has been mentioned before.

The relation of stercoral typhilitis to peri-typhilitis is doubtful. It has been noted that the disease has a tendencv to progress and to involve the left side and this appears in two different ways: In the *first,* a catarrhal colitis is followed by the appearance of pain and sensation of gas lodged on the left side. These "gas balloons," as some of the patients call them, are high on the left side—this may be called the diverticular type. In the *second,* after signs of right ovarian irritation, constipation increases and the sensation of "gas balloons" appears low on the left side.

The first variety seems to be due to an extension within the colon and its dissemination in the region in which diverticulae are most often found.

The second is due to a spread of the subperitoneal process around the pelvic brim, apparently advancing with the congestion of each menstrual period. These patchy areas of injection and edema may be seen in cases not too far advanced, in which proper search is made.

There is a variety of peri-colitis which apparently originates in the gall bladder and descends involving the parieto-colic and omento-colis folds and causing, in its later stages, a rather confused picture of upper and lower disease on the right side.

The condition is to be suspected in cases of long standing, intermittent right iliac pain and tenderness, in dyspepsia with tenderness in the right iliac fossa, although no complaint of pain is often made. These are typically ileal cases rather than cecal.

It should also be suspected in dysmemorrhea of young, unmarried women, especially if right sided ache persists between periods and the digestion is affected. The signs are: tenderness and pain in the same spot or spots at different times, often increased by exercise; delay of bismuth meal; tenderness and pain on inflation of the colon. These cases should be carefully distinguished from those in which atony and dilatation of the cecum exist without inflammation or obstructive retraction in the neighborhood. Such cases constitute quite another group, probably to be dealt with in the same chapter with local vasotonia, certainly not here.

Treatment: A liberal incision through the middle or around the outer edge of the right rectus should be made so as to reveal the terminal ileum, the cecum and the ascending colon and give access, if necessary, to the right side of the pelvis. The appendix, the cecum and its neighborhood, the situations in which inflamed veils are to be found, are all investigated, as is the gall bladder region. The appendix is removed and if no perityphlitis is found nothing else is done. If there is present also a dilated and prolapsed cecum with evidence of inflamed parieto-colic veils, the veils are severed with a knife, not torn, bleeding points caught and tied, and the dragging cecum suspended in a slit in the parietal peritoneum. If the process involves the pelvis and the terminal ileum, this is taken care of by slitting the ligament, binding down the ileum, and covering the raw area either by folds of the broad ligament or by unrolling the mesentery or by rotating the cecum inward as circumstances may suggest. If the ileo-cecal glands are much enlarged they may be removed by careful dissection. If the disease is of long standing and the cecum and ascending colon are bound down by retracted bands, especially if colitis has begun to be evident, it is better and safer to remove the cecum and ascending colon and anastomose the ileum into the beginning of the transverse colon. In the cases of the longest standing in which the muco-membranous colitis has set up toxic symptoms and in which the patients are much reduced, the surgical treatment should be done in several stages. The appendix should be removed if this has not already been done, a cecostomy or appendicostomy made for irrigation and an ileo-sigmoidostomy performed. At a later date, if necessary, the colon may be removed or as much of it as seems desirable. Such measures will only be necessary in cases in which the colitis has progressed so far as to make simpler measures hopeless. It is desirable that the cases should be recognized early and taken care of at that time.

SURGICAL CONSIDERATIONS OF ACUTE DIFFUSE PHLEGMONOUS GASTRITIS.

Richard Ward Westbrook, M. D.

AMONG the less well-known surgical diseases of the stomach is the so-called acute diffuse phlegmonous gastritis. The disease will never attract wide discussion as it is fortunately rare. It is at the same time so fatal that it is unlikely that the most skillful diagnosis and the best surgical treatment will ever save more than an extremely small percentage of cases. It is, however, necessary that the unsatisfactory condition of our surgical knowledge of this disease should be cleared up. Suggestions made by certain well-known abdominal surgeons as to treatment are, I am sure, quite inadequate. Some years ago it was my good fortune to observe and operate upon a case of true acute diffuse phlegmon of the stomach which forms the basis of this article. This case, like all the other authentic cases, was fatal in the outcome, but showed clearly the conditions which must be met, if surgery may ultimately be successful in its treatment.

Historical. It is stated that the first mention of this rare disease was made by Varandaeus in 1620. In the same century further data were furnished by Borel (1656) and Sand (1695). Occasional references to the condition are found until 1874 when an important paper by Löwenstein appeared, and another in 1896 by Leith, of Edinburgh. At the present time some 100 cases have been reported.

There are two distinctly marked varieties of phlegmon of the stomach: the circumscribed form, or abscess of the stomach wall, of which but few cases are reported; and the diffuse form—with which we have to do chiefly in this paper—known as acute diffuse phlegmonous gastritis. A case of the *circumscribed* variety has been operated upon by Dr. J. Wesley Bovée, of Washington, who recognized an abscess of the stomach wall after abdominal section, opened and drained the same, and was rewarded with a recovery. A second case of this variety was treated by partial gastrectomy, six months after the onset of acute symptoms, by F. Koenig, with recovery. No authentic case of the diffuse form has ever been known to recover, and in only two authentic cases—my own and a later one of J. E. Adams of London—has the diagnosis been made previous to autopsy.

Pathology. The diffuse form of phlegmon of the stomach has been likened to a virulent erysipelas. The parallel is striking, the streptococcus being responsible for both conditions, the deeper form of erysipelas spreading in the subcutaneous tissues and often forming pus, very much as the phlegmon of the stomach wall extends into the submucous area, also with the formation of pus.

The stomach wall is much thickened, sometimes eight or nine times greater than the normal. The thickening is greater in the pyloric portion, where the disease commences and from which it may spread to the whole of the stomach. The thickening lies chiefly in the submucous coat. This is white, or grayish-white, in color, and pus may often be squeezed from small openings in it. Microscopically it is seen to be crowded with immense numbers of round cells. In the later recorded cases, the streptococcus has been the organism found most abundantly. The lining mucous coat is usually intact, but in the later stages may be ulcerated through by the underlying suppurative process. The muscular coat is intact at the start, but may also later be destroyed in part, allowing pus to penetrate it to the peritoneal coat. The peritoneal coat very rarely is perforated, but usually becomes involved in local peritonitis.

The so-called circumscribed form of phlegmonous gastritis is due to bacterial invasion of the submucous coat, but of a milder nature. The staphylococcus is probably the infective organism. The mucous and muscular coats are thinned and pushed away from the abscess in the submucous layer. The localized abscess which forms may vary from the size of a bean to three times the size of the closed fist. It may rupture into the lumen of the stomach, or into the peritoneal cavity. The rest of the stomach may show little or no change. This form has been supposed to go on to spontaneous cure in a number of instances, where pus has been vomited. Vomiting of pus, however, may be secondary to any perigastric abscess wherever arising. Early operation in abscess should be productive of good results.

Etiology. The etiology of diffuse phlegmonous gastritis is as yet obscure. It is far more common in men than in women, at least in a proportion of 5 to 1. It is chiefly a disease of early adult or middle life. A large proportion of the cases reported have been addicted to alcholic excess. All but a few of the cases are primary or "idiopathic" in their origin, and but a few are secondary to puss-infections elsewhere. A few cases followed operation on the stomach, such as gastroenterostomy, and a few were secondary to the presence of gastric cancer. Gastric ulcer has been antecedent in only a few cases.

It is probable that the infectious organisms gain entrance to the stomach wall through the blood current rather than through any abrasion of the mucous lining, as evidence of the latter is rarely found. If the latter were the case, we should expect it to more often accompany gastric ulcer and cancer.

Symptomatology. The symptomatology in the early stages of the disease, before the onset of peritonitis, I believe may be considered fairly characteristic, although authorities state that we can hardly do more than guess at the diagnosis. I am strongly of the opinion that I should be able to make the diagnosis in a second case so characteristic as my own.

It is a violent disease from the start, and its abrupt onset may suggest corrosive poisoning. The earliest and perhaps most persistent symptom is vomiting. This is repeated at short intervals and is so continuous as to be a very distressing feature. It is said to cease in some cases a day or two after the onset, and later to recur as peritonitis advances. The vomited material is watery, becoming bile-stained, and later darkish as it contains more material from the upper bowel.

Pain soon follows the sudden onset of the vomiting, and becomes the most prominent symptom. It is localized in the epigastrium, and is severe and continuous. In some cases it is said to be delayed, or absent.

Pressure over the epigastrium elicits marked tenderness. Rigidity is not of high degree before peritonitis has advanced, but there is present a very distinct sense of increased resistance in the epigastrium, over an area which the hand may cover.

The pulse at first is full, but acquires fairly early a weak and rapid character. The temperature may range from 100° to 105°. Chills often occur. Constipation, or constipation preceded by diarrhoea, is apt to be the rule. Diarrhoea sometimes exists. The thirst is extreme as a result of the inflammation and the constant vomiting. Hiccough is commonly present. The patient's mental anxiety and restlessness are very pronounced, and he has the appearance of being very gravely ill.

Leith states that the average duration of the cases analyzed by him was six and a half days before death occurred. It may occur much earlier. Death is produced by septicemia with general peritonitis.

Differential Diagnosis. The diagnosis must be made chiefly with regard to differentiation from acute pancreatitis and perforated gastric ulcer. At the very onset it may simulate acute ptomain or other poisoning, but on the second day it would require differentiation from the conditions mentioned. The following parallel columns will show the distinguishing symptoms most readily.

	Acute Pancreatitis.	Perforated Gastric or Duodenal Ulcer.	Phlegmonous Gastritis.
Previous history	Healthy, or occasional attacks of indigestion. May have had gall-stone history.	Periodic or persistent indigestion.	Healthy; alcoholism, with or without gastritis. Gall-stone history negative.
Age	Chiefly middle age.	Early adult and middle age.	Chiefly middle age, but may occur from 11 to 76.
Sex	Male, in large proportion.	Male, chiefly.	Male, in large proportion.
Chill at onset	Usually lacking.	Usually lacking.	Frequently present.
Vomiting	Follows the pain. Becomes bile-stained, later black from altered blood.	Follows the onset of pain. Blood may be vomited.	Commences at once and is usually constant. Becomes bile-stained and dark. No blood present. No pus in early stages.
Thirst	Usually extreme.	Less marked.	Very marked and often intolerable.
Pain	Is the first symptom, accompanied with faintness or collapse.	Is the first symptom, accompanied with faintness or collapse.	Appears after the vomiting, and often after a chill.
Temperature	Irregular, usually low, but may be high.	May be subnormal early. Later high.	Likely to be high 102° to 105°.
Pulse	Rapid and small.	Rapid and small at the onset.	From 100 to 110 early; later very rapid and thready.
Hiccough	May be present.	Not prominent.	Frequently present.
Bowels	Constipation, usually extreme.	Usually constipation.	Either constipation or diarrhoea.
Tenderness	Extreme in epigastrium.	Extreme in epigastrium.	Very marked, but not extreme.
Tumor	Rarely palpable tumor. Increased sense of resistance with distention.	None.	None. But increased sense of tissue resistance.
Rigidity in upper abdomen	Apt to be extreme.	Extreme.	Not extreme, but well marked.
Leucocytosis	8000 to 39000.	Averaging 20,000 to 30,000.	30,000 to 40,000 in cases observed.
Urine	Sugar may be present.	Negative.	Negative.
Jaundice	Slight jaundice usually present.	Usually absent.	Slight, in 16% of cases.

It will be seen that it is possible to make the diagnosis in the earlier stages of the disease, although it is but a narrow shading off from the picture of acute pancreatitis. An accurate history of the onset, combined with a careful observation of the several points of variation will throw the weight of evidence towards the correct diagnosis. At any rate, the diagnosis of an intra-abdominal surgical calamity requiring laparotomy should ordinarily be possible within some hours after the onset of the disease.

Report of Writer's Case. My own case was that of H. A., age 51, captain of harbor lighter, married. Previous history negative. Denies syphilis. No history of gall-stones. Has had no pus infection of any kind for months past. Has bad teeth, but there is no trace of pyorrhoea alveolaris. Is an habitual drinker, chiefly whiskey and beer, but is rarely intoxicated. Has always had a good stomach up to six months ago, since when he has been inclined to vomit his breakfast.

Present History. Was well on Sunday, Jan. 27, 1908, eating as usual, and having cod-fish for supper. Went to work on Monday, and felt well until the afternoon, about 3 o'clock. Was then seized with chilly sensations. Went to bed on board his boat, was given hot coffee and whiskey and became warm. At 5 o'clock began to vomit greenish material. At 6 o'clock reached home by means of the street cars, without assistance, and at this time pain commenced in the epigastrium, and continued steady and severe. The pain was not relieved by pressure, but he received some relief by steadying the epigastrium with his hand. Vomited continuously all that (Monday) night, and on Tuesday, also hiccoughed steadily. Thirst was extreme; he had no sleep at all and chills returned. At noon was seen by his family physician, Dr. W. G. Hirseman, who found him with thighs flexed upon abdomen, with anxious countenance, heavily coated tongue, temperature 100½°, respiration 35, pulse 85, good quality. The abdomen was not distended, but palpation revealed marked tenderness of the epigastrium most intense to the right of the middle line. Below the umbilicus deep pressure did not elicit tenderness. There was no icterus. The patient was given one-fourth grain of morphine by hypodermic injection, and a powder for the vomiting. On the return of the physician at 8 p. m. the patient's symptoms were increasing, the abdomen showed slight distention below the umbilicus, and marked distention in the epigastrium. The temperature was 101½°, respiration shallow, and pulse 100, small, and intermittent. On consultation with Dr. L. W. Pearson, the patient was sent to the Brooklyn Hospital, as probably requiring surgical treatment.

I examined the patient at 1:30 a. m., Wednesday, less than thirty-six hours from the time of onset of the illness. The patient was seen to be a man of large frame, with every indication of severe suffering, complaining of constant epigastric pain, worse in paroxysms, vomiting slightly every minute or two, and hiccoughing. Pulse averaged a little over 100 and was regular. Examination showed a moderately distended abdomen, soft, and not tender below the umbilicus, but very tender above. The whole epigastrium was tender, but the greatest tenderness was to the right of the middle line, at the point over the head of the pancreas where greatest tenderness is also shown in acute pancreatitis. The flat hand laid upon the epigastric area received a sensation of resistance or tumor, nearly the size of the palm, but not of a high degree of rigidity. Percussion gave a tympanic note, extending well up into the left hypochondrium. The combined findings suggested to my mind a distended stomach overlying a pancreatic tumefaction, or of tumefaction or pus collection in the lesser omental cavity. A few rales were heard at the base of the left chest. The blood test showed a leucocytosis of 40,000. A diagnosis of an intra-abdominal calamity was made, strongly suggesting acute pancreatitis or a perforation of the posterior stomach wall, and operation advised. Examination under ether gave the same impression to the hand.

Operation. Certical incision through rectus muscle, four inches long, one-half inch to right of middle line. Preperitoneal fat and peritoneum seen to be slightly edematous. Sero-pus escaped on incising peritoneum. Immediately, the stomach wall presented itself in the wound, thickened and boggy, with highly reddened but smooth peritoneal coat, showing no evidence of ulcer or perforation. Further examination showed a segment of the stomach wall about 3½ inches in breadth to be involved, the thickening apparently extending around the circumference of the stomach, although the thickest part lay in the anterior wall. This thickened segment commenced with a well-defined border about 1½ inches from the pylorus, and the normal wall of the pyloric area could be invaginated with the finger into the thickened segment, and the thickened wall palpated in that manner. The border of the thickened segment extending toward the cardia of the stomach was less well defined, and there was some thickening shading off towards the cardia.

The abdominal incision was increased to 5½ inches, and an exploration was made through the meso-colon into the lesser sac, but revealed only a smooth, thickened posterior stomach wall, gently adherent. The meso-colon and lesser omentum were both very edematous and thickened, and a few enlarged lymphatic glands could be felt along the greater curvature of the stomach. Pancreas and gall-bladder were both found to be normal. It was decided to incise the stomach wall in the thickened area and a longitudinal incision, three inches in length, was gradually made down through the thickened coats. When the submucous layer was reached, drops of pus oozed freely out of small openings the size of a canary seed. Similar small cavities, near the pyloric margin of the thickened area were seen to be filled with opaque coagulum, not yet broken down into pus. The stomach wall was over half an inch in total thickness at this point. As far as the interior of the stomach could be seen and felt with the finger through the opening, the mucous lining was deeply congested and smooth, no evidence of erosion or ulcer being found. The condition was then recognized as a diffuse phlegmon of the stomach wall, and the question of drainage became the important one. The transverse colon was completely collapsed, but the jejunum was moderately distended, and dark bile-stained fluid welled freely up into the stomach from the duodenum. It was decided to trust to a gastrostomy for drainage, leaving the incisions in the stomach and abdominal wall as freely open as possible. The drainage tube was a large sized stomach tube and was passed through the pylorus six inches into the duodenum. The incision in the stomach wall was loosely sutured with a catgut guy-rope suture at each end penetrating only to the submucous layer and left long and the stomach lifted up into the abdominal incision and held there by tacking the catgut guy-rope to the abdominal wall on each side of the incision. Two wicking drains were passed into the lesser peritoneal sac, and three large gauze tampons were packed freely about the involved area of the stomach to isolate it in some measure, and to drain the peritoneal cavity. The abdominal incision was closed to two-thirds its extent with through and through silk-worm gut sutures. The drainage tube was sutured to the skin incision. Drainage made its way up freely through the tube from the duodenum, and the patient was taken back to his bed in fairly good condition.

All vomiting ceased at once and the bile-stained fluid which passed from the duodenum by siphonage into the bottle attached, amounted to many ounces in the next twenty-four hours. The patient was allowed to suck ice wrapped in gauze to relieve his extreme thirst. He retained large quantities of saline infusion by slow absorption from the rectum after the method of Murphy. The gauze tampons in the abdominal incision drained very freely. There was no leakage from the stomach about the tube. The stomach area was no longer tympanic to percussion. The patient passed good amounts of urine, and seemed generally improved, talking freely. He still complained of the epigastric pain, however, which was but partially relieved by the operation. The pain came in marked paroxysms, emanating from the stomach area, and not due to general peritonitis.

Thirty-six hours after operation, the upper abdomen was very sensitive, and the skin hyperesthetic. Abdomen was still but moderately distended, and but moderately tender below the umbilicus. Much drainage persisted from the wound. Several stitches were removed, and the stomach inspected as far as possible, and could be seen to be purplish in color along the greater curvature. Pulse 120. Patient not so clear headed, but he asked if condition was serious. On the third day after operation, patient was still suffering the paroxysmal pain; conscious, but unable to speak connectedly. Kidneys had ceased to secrete. Death ensued 3½ days after operation and 5 days after onset of attack.

Report of Autopsy. Body well nourished. The peritoneum is everywhere somewhat injected and bathed with sero-pus, covered in spots with fresh lymph. The intestines are slightly adherent with lymph. The appendix is normal. The mesentery is very friable. The meso-colon is inflamed, thickened and covered with lymph. The gastric-colic omentum, more particularly at lower curve of stomach, is inflamed and edematous. The pancreas is normally located and in situ, apparently normal in size and consistency. Anterior aspect of the stomach is intensely hyperemic, studded everywhere with petechiae, covered with fresh lymph over the anterior duodenal half. The mesentery contains a great deal of fat and is somewhat edematous. The mucous membrane of the small intestine is everywhere cyanosed, somewhat edematous, excepting in the upper part of the jejunum which is pale and edematous. It is intact. The caput coli is normal. The mucous membrane of the larger gut is moderately congested and edematous.

The anterior mediastinum is normal. The superficial area of cardiac dullness is considerably increased. There is a total synechia of the left pleural cavity. Also a total synechia of the right pleural cavity, the adhesions being very ancient and firm. The heart is much enlarged; the epicardium thickened and opaque and studded with petechiae at the base. The left auricle is somewhat dilated and hypertrophied. The auriculo-ventricular orifice is large. The valve shows a moderate amount of atheroma anteriorly, in an early stage apparently; otherwise normal. The tricuspid orifice is very large; admits of four fingers separated. The valve seems to be normal. The myocardium is considerably thickened in both ventricles, firm in consistency, a trifle brownish on section. All of the cavities of the heart are markedly enlarged: eccentric hypertrophy and dilatation.

LUNGS.—The left lung is about normal in size; somewhat heavy, crepitates feebly on pressure. On cross-section the cut surface is very dark and moist. The entire organ is intensely congested and edematous. The right lung is somewhat enlarged, heavy, crepitates feebly on pressure. On cross-section the cut surface is very dark and moist. The organ is intensely congested and edematous. The liver and the diaphragm on its under surface are united by old firm connective tissue. The sub-diaphragmatic lymph nodes are glued together. Diaphragm contains a large calcareous mass.

SPLEEN.—The spleen is large. The capsule is thick. On cross-section the surface is dark mahogany, moist; the pulp easily scrapes away; the trabeculae are somewhat hyperplastic.

PANCREAS.—No edema or pus in pancreas.

The lower surface of the gall-bladder is covered with plastic lymph. Organ is intact. No calculi.

LIVER.—The liver is large, somewhat firm in consistency, surface is smooth below and covered with old inflammatory tissue above. On cross-section the cut surface is smooth and presents no further distinguishing features.

KIDNEYS.—The left kidney is very large; the capsule is adherent in spots. Areas of depression on the surface of the organ, which is otherwise finely granular. On cross-section the cut surface is dark and cyanosed; cortex everywhere swollen; markings distinct. The right kidney is small. The capsule is everywhere adherent. It contains three cystic cavities filled with serum and fibrim. What remains of the cortex is moderately swollen. The markings are somewhat indistinct.

STOMACH.—The stomach is greatly enlarged, the mucous membrane is everywhere thickened, congested in spots, showing many petechial hemorrhages. The pylorus is normal as far as the mucous membrane is concerned. The submucosa and muscularis of the stomach are phlegmonous. The whole stomach wall in the pyloric region is very thick, perhaps more than half an inch. This condition involves all of the lower aspect of the stomach, only a small area at the cardias end being free. No evidence whatever of ulceration. The duodenum is moderately congested, edematous; otherwise free from change. The stomach is free from pus.

Microscopic and bacteriological examinations showed the presence of the streptococcus. The streptococcus was also obtained from one of the kidney cysts.

For the report of the autopsy, I am indebted to Dr. J. M. Van Cott.

Analysis of Operative Cases Reported.

There are but five authentic reported cases, in addition to my own, where surgery has been employed in acute phlegmonous gastritis. Of these, two have already been referred to as being of the circumscribed variety.

Of the acute diffuse variety, but three authentic cases have been reported as having been operated upon, and in two of these the true condition was not recognized until the autopsy. The first case was of Leith, of Edinburgh, who in 1895, operated several days after the onset under the diagnosis of general peritonitis, supposed to be secondary to typhlitis, making an incision below the umbilicus and washing out and draining the abdomen. The patient died in collapse several hours after operation. Autopsy showed a typical acute phlegmon of the stomach. The second case reported was that of Lennander, who, in 1898, operated on a woman of 29, with a history of gastric symptoms dating back two or three years, who gave evidence of a beginning general peritonitis following a supposed perforation of the stomach or duodenum. No perforation was discovered, the abdomen was merely drained, and the patient died sixty hours after operation. Autopsy disclosed a diffuse phlegmonous gastritis involving the entire organ, the portal of infection probably having been through two non-perforating ulcers of the lesser curvature. The third case was a girl, aged 13 years, operated on by J. E. Adams, St. Thomas's Hospital, London, under the diagnosis of perforative peritonitis with general peritonitis, four days after the onset. No lesion being found at the appendix, exploration of the stomach showed no adhesions or perforation, but stomach walls an inch in thickness when held between the fingers. The condition was present throughout the stomach, but more noticeable in the pyloric half. By exclusion, the diagnosis of acute primary phlegmonous gastritis was made. Beyond drainage of the peritoneum, no further operative attempt was made. The child lived four days after the operation. Peritoneal fluid removed at operation gave pure cultures of the pneumococcus, and cultures made at autopsy gave the pneumococcus from the submucous and serous coats of the stomach.

Included in the list of reported cases of phlegmonous gastritis in Robson and Moynihan's "Surgical Diseases of the Stomach" are three cases which should have no place under that heading. One of these (Case 84) is an instance of perigastric abscess following an eroding gastric ulcer of the posterior wall, where posterior gastro-enterostomy was done by Robson and recovery ensured. In another chapter, this case is not claimed as one of phlegmonous gastritis, but its incorporation with the list of cases has caused misleading quotations of the case as a cure of phlegmonous gastritis by gastro-enterostomy. Another case (No. 85) was an instance of prolonged gastritis, the mucous lining only being involved, the patient dying after gastro-enterostomy, by the same operator.

A case which has been much quoted as a recovery from acute phlegmonous gastritis by mere abdominal drainage was that operated upon by Mickulicz, and reported (1902) by Lengemann. The patient was a young woman of 18, with prolonged history of anemia and gastric ulcer. Operation was done with expectation of finding a perforation. Bloody serum *and gas-bubbles* were present in the abdominal cavity, but no perforation was located. The stomach was thickened on its anterior wall, and two yellowish-gray maculae presented there, each about the size of a silver quarter. No incision was made into the stomach wall, and the operator is said to have made his diagnosis on the symptom-complex. Gauze drainage of the abdominal cavity and over the inflamed area of the stomach brought about a prompt recovery. From my own experience with an undoubted case of diffuse phlegmonous gastritis, I cannot believe that this case was correctly diagnosed.

I cannot find, therefore, that there is any reliable proof of the cure of diffuse phlegmonous gastritis by medical or surgical means to the present date.

Possibilities of Surgical Cure.

One must admit that the chance of a surgical cure is extremely small. The object of this paper is to establish the lines along which surgery must proceed if there is to be any hope of cure. Robson and Moynihan suggest that benefit may accrue from drainage and rest of the stomach by gastro-enterostomy or gastrostomy. Gastro-enterostomy, I am sure, would be an entirely unfit procedure, and would only defeat the end sought by adding additional traumatism to the stomach wall and further the spread of the infection. Gastrostomy would be also inadequate as shown by my own case, where a free incision into the heart of the phlegmonous area, and rest to the stomach, had no noticeable effect in staying the spread of the inflammation. The claim made by Lengemann, who reported the case of supposed cure by Mickulicz, is altogether without appeal to surgical judgment. He states that the free drainage of the peritoneal cavity by gauze tamponade must have been sufficient in that case to limit peritonitis and at the same time to bring about a cure of the early phlegmon of the stomach wall. There is no reason whatever why a phlegmon confined within the walls of any abdominal viscus should be cured by simple drainage of the peritoneal cavity. Mickulicz's case, in the light of my own case, strongly suggests an induration of the stomach wall secondary to ulcer.

My belief is that only in the most radical treatment of an early case can surgery hope to cure. Such treatment would seem to require either the most complete drainage of the tissues involved, by multiple incisions, or wide excision of the same. In my own case, the thickened area, though not broad, extended from the anterior wall through both greater and lesser curvatures, around nearly a complete segment of the stomach, the posterior wall immediately behind being also thickened. Multiple incisions down to the mucosa would manifestly have been very difficult in adequate degree in my case. It is possible that a still earlier or more limited case than mine might be adequately treated by free multiple incisions combined with gastrostomy. The possibility of having present a developing circumscribed abscess should be kept in mind in deciding the treatment, as incision should there suffice. My own case showed plainly in the submucous tissues the spreading gray lines of a streptococcus infection with little pus.

I believe that nothing short of a partial gastrectomy was indicated in my case. The risks of such a step would have been extreme, but not entirely beyond hope. The condition being absolutely hopeless otherwise, one would be justified in taking extreme operative risk. In a similar case, I would do partial gastrectomy, adopting at the start the usual technique. At the cardiac end, the clamps should be applied two or three inches beyond the marked thickening if possible. At the duodenal end, less distance beyond the involved area will suffice, as the inflammation does not tend to attack the duodenum. After cutting away the stomach with knife or scissors, a large-sized, moderately stiff drainage tube or catheter should be passed several inches into the open end of the duodenum, and the latter closed about it with purse-string suture. This tube will answer the double purpose of drainage of the duodenum, from which, in my case, a large quantity of dark fluid constantly welled up, and also for feeding later on, as in ordinary duodenostomy or jejunostomy. The treatment of the stump of the stomach remaining would be simply that of staying of hemorrhage from the cut surface, and drainage. This might be accomplished by whipping over the cut edges with catgut, and leaving the cavity unclosed, to be surrounded with a gauze pack; or the walls might be quickly sutured together with catgut for the most part of the opening, and a large soft rubber drainage tube left in the cardia. A large, free pack of simple gauze left in the stomach area might provide sufficient drainage of that space and the peritoneal cavity. If the patient recovered, and were in fit condition, an anastomosis of the jejunum with the retracted cardiac end of the stomach, through a left rectus incision, might be done some weeks later. If this were not feasible, life might be prolonged by the duodenostomy.

Conclusions.

1. Acute diffuse phlegmonous gastritis is a rare form of inflammation of the wall of the stomach, involving chiefly the submucous layer, and produced usually by streptococcus invasion, locally, or through the blood current. It is to be distinguished from local abscess of the stomach wall, which is still more rare.
2. It occurs chiefly in middle and late-middle life, but may occur at any period.
3. It is to be distinguished principally from acute pancreatitis and perforated gastric ulcer, an important difference being the onset of vomiting before pain.
4. The prognosis is an absolutely fatal one unless surgery may ultimately produce a cure.
5. Simple gauze drainage about the stomach, gastrostomy, and gastro-enterostomy, as suggested by various surgeons, do not form adequate methods of surgical treatment.
6. Partial excision of the stomach in early cases with duodenal feeding and gastro-enterostomy at a later stage is a possible curative surgical procedure in early cases.

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CANCER OF THE RECTUM.

H. Beekman Delatour, M.D., F.A.C.S.,

Brooklyn-New York.

SURGERY of the abdominal viscera through improvements of technique and added experience of operators has been deprived of many of its former complications and is attended by a constantly diminishing mortality. Operations on the pelvic organs and the appendix have long since become commonplace. Within the past few years surgery of the upper abdomen, the stomach, liver, and gall bladder has been extended and perfected, and today is approached with much more confidence than formerly.

Malignant disease of the intestine, however, has been much neglected and operations have been postponed until acute symptoms, such as obstruction, have developed and forced interference. During the past three or four years these cases have been diagnosed in the earlier stages and more radical operations are being undertaken with a marked reduction of operative mortality and a very decided gain in permanent cures.

Cancer of the rectum has been the subject of operative attack for many years, but the methods employed were such that many cases were passed over as inoperable or were so operated that not sufficient bowel was removed to insure a permanent result. The hesitancy of the surgeon to produce an artificial anus has passed many a case on to a period of prolonged suffering and ultimate death. "I would rather die than have an artificial anus," is a statement we have frequently heard and given expression to ourselves. The very idea of it is repugnant. This feeling has delayed our progress in the treatment of malignant disease of the sigmoid and rectum and been responsible for the infliction of prolonged suffering on many.

Inexperience, tending to high operative mortality, has also been a factor in leading one to pass upon a given case as inoperable. Very interesting in this connection is the paper of Mayo in which he compares the percentage of operable cases at their clinic at different periods and also the operative mortality of the same.

During the period from 1893 to 1910, there was an operative mortality of 17.8 per cent.; from 1910 to 1913, it was 17.17 per cent., with an operability of 51 per cent. During this period only about one-half the cases examined were considered subjects for a radical operation.

For the years 1913, 1914 and 1915 the mortality averaged 12.5 per cent. and the operability 71.8 per cent., while the operations were made more radical. During this period nearly three-quarters of the cases examined were operated upon. With further experience and due care in selecting cases the mortality will be lowered and the percentage of cures increased.

Early diagnosis is the keynote of success, but we must constantly bear in mind that cancer of the bowel is slower of metastasis than cancer in other portions of the body, and that many apparently advanced growths can be successfully removed with a long period of immunity from recurrence and possibility of permanent cure. In doubtful cases exploratory operation is certainly justifiable, and should be performed in cases of persistent intestinal conditions in patients beyond thirty-five years of age, when other means have failed to reveal the cause of the symptoms.

We must not wait for emaciation and cachexia to develop, for in these cases they appear late and the patient is then quite likely in the inoperable stage.

Having made the diagnosis of cancer of the lower bowel, what shall be our method of attack? Shall it be from the perineum, through sacral section, by the abdominal route or by a combination of these? This must depend somewhat on the individual case, but no operation should be undertaken unless it is sufficiently radical to eliminate the disease. The frequency of recurrence in the past has been due to a too great desire to retain the anus in its normal position, and the sooner the surgeon can realize that this should be the last consideration the quicker shall we see an increased percentage of lasting cures.

It is our belief that very few cases can be satisfactorily operated by either the perineal or sacral routes alone; and, further, the abdominal part of the operation is of immense importance in permitting a thorough exploration of lymph glands and liver to determine the amount of extension of the disease. If there is positive evidence of involvement of the liver, no radical excision should be undertaken. Enlargement of the lymph glands does not contraindicate operation, for in many cases these glands are found to be the seat of a simple inflammatory process and not due to extension of the growth.

If an artifical anus has to be produced, should we endeavor to place this in the perineum or on the abdomen? Careful watching of several cases has convinced us that the abdominal anus is the more easily cared for by the patient. The perfection of the technique of producing the abdominal anus, and teaching the patient its proper care together with the application of a correctly fitted apparatus have so reduce dthe disagreeable features of this condition that we no longer hesitate to advise our patients to accept the operation.

The abdominal-perineal operation in either one or two stages is our preference, and of late we have been better satisfied with the one stage operation in those patients in whom a sufficient time could be given to preliminary preparation. In cases of obstruction, either complete or nearly so, a preliminary colostomy should be done in order that the bowel may be properly emptied and cleansed, for the mortality is largely due to sepsis from escape of feces during operation.

The method of procedure varies with different operators, but a careful study fails to reveal any very radical differences. The most recent descriptions are those of Jones of Boston, and Coffey of Portland. The method of Coffey we have never attempted as it does not seem practicable.

The operation which we have followed during the past four years in eight cases without any operative mortality and so far no recurrence, is similar to that described in the text books.

Operation: With the patient well elevated in the Trendelenburg position, the abdomen is opened in the median line and an examination of the extent and location of the growth is made; the liver is also examined for evidences of involvement. The intestines, except the sigmoid, are then carefully placed in the upper abdomen and protected by a large gauze pad, thus leaving the pelvis clear for our manipulations.

The sigmoid is now lifted out and its mesentery traced to the promontory of the sacrum where the inferior mesenteric artery can be felt. The peritoneum is then incised and the vessel ligated in two places, between the upper and middle sigmoid branches, and the artery divided. This insures proper blood supply to the proximal sigmoid which is to be used for the colostomy. By further separation of the peritoneum to the left, the left ureter is exposed. The mesentery is then divided from behind forward up to the edge of the bowel. The incision through the peritoneum is now carried downward parallel to the bowel and about one inch from it to the bottom of the pelvic pouch and then these incisions are joined across the front of the bowel. By blunt dissection with the fingers the rectum, together with the mass of fat, is separated from the hollow of the sacrum, down to and, if possible, beyond the coccyx. If the vessels have been ligated above, this is accompanied by very little bleeding. The next step is to free the bowel from the bladder and prostate, and in doing this great care has to be exercised not to injure the ureters. The dissection from above is carried down as far as possible for this simplifies greatly the second stage of the operation. The division of the bowel is not made until all dissection has been completed. A large gauze sponge is now packed in the pelvis and soon stops any oozing that may be taking place.

Two clamps are now placed on the bowel at the point selected for division. the bowel is severed by the actual cautery and both ends inverted and closed by silk suture. The gauze pack is next removed from the pelvis, and the distal portion of the sigmoid and rectum placed in the pelvis and covered with a small gauze pad. The edges of the divided peritoneum are next sutured by continuous chromic suture over the pelvis, thus excluding it from the general peritoneal cavity.

Where the amount of bowel to be removed was too large to pack into the pelvis and permit suture of the peritoneum over it, we have removed a large segment of the freed portion, after properly closing the lumen by heavy silk ligature and then dividing with the cautery.

We next proceed to the production of the colostomy as follows: A sufficient amount of bowel is brought forward so that about two inches will project beyond the skin, the bowel is then sutured to the peritoneum in the upper portion of the wound, the fibres of the rectus muscle are separated and the anterior sheath divided and through this the end of the intestine is passed and brought out beyond the skin where it is fastened by several silk sutures. After final cleansing of the abdominal cavity the wound is closed in layers and a gauze dressing applied. The sutures closing the lumen of the bowel are left in place and the bowel is not opened until from the third to the fifth day. The method of producing a colostomy described by Brinsmade has given very satisfactory results; as yet we have not used it.

The further steps of the operation may now be carried out if the patient's condition will permit, or may be delayed for several days. As this procedure rarely takes more than eight to ten minutes it can usually be carried out at once. The patient is put in the lithotomy position with the pelvis well elevated, the anus is surrounded by an incision through the skin and then closed by a strong silk suture. The levator ani is next divided and the rectum separated from the prostate or uterus in front and the remaining tissues attaching it to the coccyx divided. The free end of the sigmoid can now usually be seized and bought through the wound and the remainder of the section be done from above downward. There is usually very little hemorrhage, the only vessels of importance being those near the skin and easily reached. In this way from fifteen to twenty inches of the bowel are removed. The gauze pack is now removed, the wound dried out and the large cavity remaining is lightly packed with zinc oxide gauze and the anterior portion of the perineal wound closed by interrupted silk sutures. If thought best the uterus and adnexa, or portion of prostate can be removed as a part of the procedure.

The after-care consists in irrigation and repacking of the lower wound as is necessary. The opening of the bowel is delayed for several days so as to avoid infection of the abdominal wound. In cases, where necessary, a large drainage tube may be sewn into the bowel and the free end placed in a bottle so that the discharge is collected without soiling the wound.

The extra portion of bowel, one and a half to two inches, projecting above the skin can be cut down to the level of the skin at any time without anaesthesia. We believe the leaving of this for several days to be an excellent plan because sloughing of some of the bowel occasionally takes place and then the opening is brought too close to the skin line.

After recovery the patient is fitted with our permanent colostomy cup which enables him to go about his business without fear of soiling his clothing and without the presence of disagreeable odors.

This operation, which has given in our hands an immunity of over eight years in one case, and others still free of recurrence at various periods over two years, with no mortality in the last eight cases and with comparative comfort to all during those years, strongly appeals to us when we recall the sufferers we have seen in the later stages of the disease. These poor sufferers are in a deplorable condition, reduced to mere skeletons, suffering intense agony, with constant tenesmus and a continuous foul rectal discharge. The odor is so offensive that they are avoided by their families. Their condition is worse than death. Let us make every effort to reach these people early and save them this miserable existence.

Notice of Annual Meeting on page 545.

CLINICAL REPORTS.

EXTENSIVE AND RECURRENT CARCINOMA OF THE BREAST, AXILLA, NECK AND THORAX.

James Peter Warbasse, M.D.,
Brooklyn-New York.

CASES of carcinoma of the breast, which have or have not been operated upon, which show symptoms of extension along the course of the axillary vessels and nerves, giving rise to swelling, pain, and numbness in the arm, have customarily been regarded as inoperable, and condemned to morphine, x-rays, serums, bacterins, or quackery until the inevitable end. The suffering of these patients is very great, and death is welcomed as a relief. Has surgery nothing to offer these unfortunates? I think it has. The mistake made by the older surgeons has been to think of carcinoma of the breast as carcinoma of the breast, when as a matter of fact it soon is carcinoma of the axilla, neck, and thorax, and should be thought of from the beginning, either in fact or potentially, as such.

In these desperate cases the surgeon must put out of his mind the idea that he is considering a disease of the breast, lest the psychology of timidity be stimulated by the observation of the great distance from its origin which the disease has traversed. When we think of disease of the axillary vessels, brachial plexus, scapula, humerus, clavicle, lymphatics of the neck, ribs, pleurae or lungs, we are aware that any of these structures may be removed, and are every day being attacked with impunity by surgery. Primary cancer of these structures is unhesitatingly extirpated. Why should the surgeon withhold his skill from such disease, if perchance it were preceded by a cancer of the breast?

These patients can be made more comfortable, and life in a certain number prolonged, and in some the disease cured by such radical operations. I have no hesitation in saying that such operations have more to offer and will show more cures, than the simple amputation of the breast for primary carcinoma which was commonly practiced thirty or forty years ago.

When the disease involves the axillary vessels and nerves and has palsied the arm, the operation begins with amputation of the shoulder. A flap is made from such tissues as are farthest from the disease. The scapula and clavicle should be removed without hesitation in order to remove disease or to uncover the vessels and nerves which are involved. The axillary and sub-clavian vessels should be followed up into the neck and thorax, and the vessels together with all surrounding tissues removed. This dissection and excision may be carried as far as is necessary to reach the limit of the disease. At the same time the cords of the brachial plexus should be followed up and removed with their surrounding tissues. Before cutting the nerve-trunks they should be injected with novocain to block impulses and prevent shock.

This dissection and excision of vessels and nerves may be carried as far as is necessary. If it is discovered that a rib or ribs are involved in the disease, they may be removed. Ribs are removed for other conditions; why not to save a patient from cancer? Involvement of the pleura calls for resection. Involvement of the lung de-

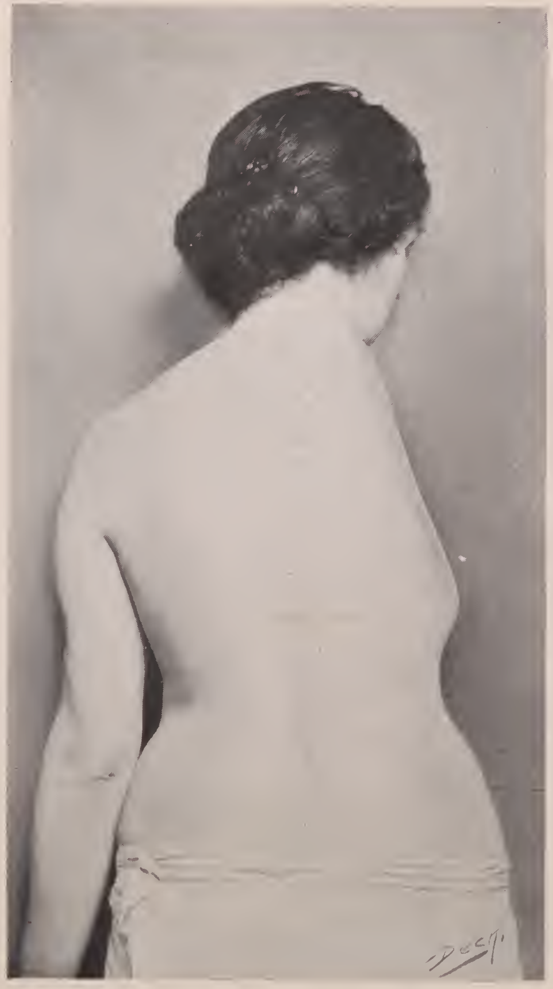


Fig. 1.

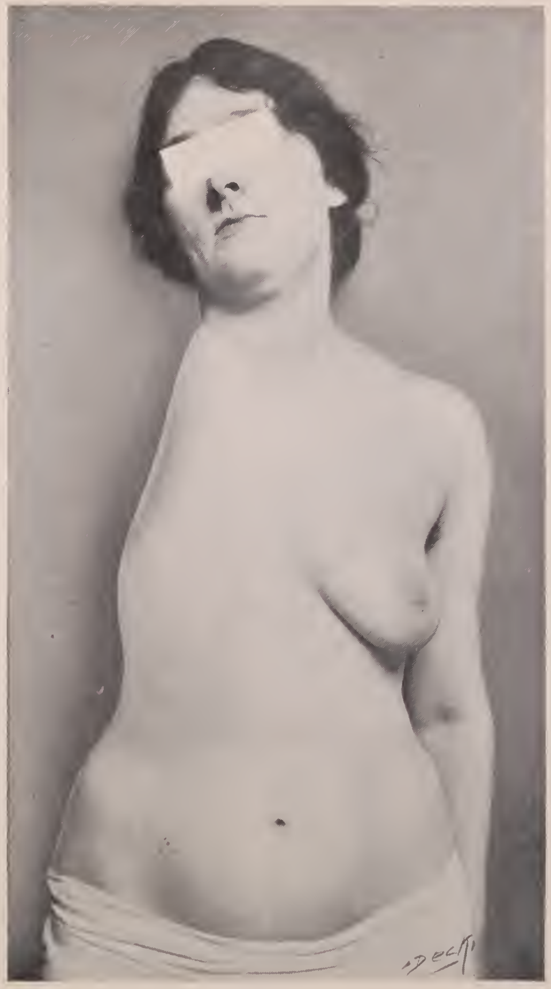


Fig. 2.

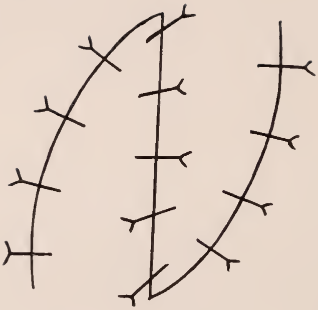


Fig. 1. Warbasse Nose Case

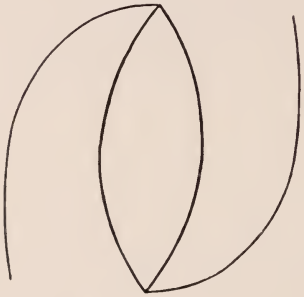


Fig. 2. Warbasse Nose Case

mands removal at least of the affected lobe. A lobe or the whole lung is excised for other disease, why not for carcinoma?

There is no structure in the side of the neck which may not be sacrificed. Vessels, including the internal jugular and carotids, may be resected. The brachial plexus, vagus, and phrenic nerves may all be removed. In the chest the only structures which must be preserved on one side are the heart, aorta, and vena cava. The whole of one lung, the ribs which cover it, clavicle, scapula, arm, all the vessels and nerves of one side of the neck, and the neighboring and involved connective tissue, muscles, and lymphatics may be extirpated. This means that everything, practically on one or the other side of the spinal column from the base of the skull to the diaphragm may be removed (Figs. 1 and 2).

No operation,of course, would involve all of these structures; cancer would not involve them all. They are enumerated, however, to show the possibilities of radical operations. Such procedures should be carried out with due regard for the possibilities of shock. Blood should be saved; and nerve trunks should be desensitized. Operations of this sort may be done in several stages, with intervals of several days for recuperation. In the hands of the experienced surgeon who knows how to save blood and minimize shock, these operations have much to offer.

The experience of surgeons is showing that many patients, otherwise doomed to a painful exodus, may be made comfortable, may have life prolonged, or may be cured by such radical procedures. The literature of surgery is growing rich in the reports of these triumphs. Presumedly hopeless cases have been cured. Many cases have been operated upon repeatedly for recurrences and life prolonged, or the disease ultimately cured. No patient should be regarded as beyond the hope of relief unless the general toxemia and inanition indicate an early conclusion.

EPITHELIOMA OF NOSE.

James Peter Warbasse, M.D.,
Brooklyn-New York.

THIS patient, a man now seventy-two years of age, was operated upon by me twenty-two years ago for epithelioma of the nose. At the place where the nose-clip of his eye-glasses pressed against the skin on the side of the nose, an indurated area had developed. Discontinuation of the pressure by changing the position of the clip and modifying the character of the glasses was not followed by healing. The area was small, and the induration but slight, still the suspicion of epithelioma was sufficient to call for its removal. Accordingly, under cocaine anesthesia, an eliptical incision was made about the area of the disease, which was removed, together with a small zone of apparently normal skin around it. As large a wound was made as could be closed by simple suturing. The closure of the wound was accomplished by interrupted silk sutures. The removed piece was subjected to microscopic examination by Dr. Eugene Hodenpyle and Professor T. Mitchell Prudden, of the College of Physicians and Surgeons, New York, both of whom reported that the growth was epithelioma. Most probably enough tissue had been removed to eradicate the growth. The incision had been placed about 2 m.m. away from the apparent disease. Still the operation had been done for two purposes: (1) diagnosis and (2) therapy. Had a positive diagnosis of epithelioma been made before the operation, the therapy would have been expressed in a wider operation.

The diagnosis now being at hand, it was determined to apply the therapeutic measure of choice. The wound had healed and the sutures had been removed. Under local cocaine anesthesia, the scar of the first operation and the skin about it for a distance of 4 m.m. were excised by an elliptical incision. This left a wound too large to close by simple apposition sutures. A curved incision was carried from either end of the elliptical wound, marking out a flap on either side, the length of the wound, and having a width at their bases equal to the widest width of the wound (Fig. 1). One of the lateral flaps was made by carrying the incision to the median line of the nose, the other by carrying the incision to the inner canthus of the eye. These flaps were dissected free, and united in a straight line over the denuded area. The two lateral wounds were then closed by interrupted sutures. Fine interrupted silk sutures were used (Fig. 2). Primary healing followed.

Now after twenty-two years the patient is here free from any suggestion of disease, and with a scarcely discernable scar. It is observed that he still, as a matter of precaution and habit, wears his glasses low down on the nose, thus giving expression to the surgical sense which prompts avoidance of further irritation of a once vulnerable area.

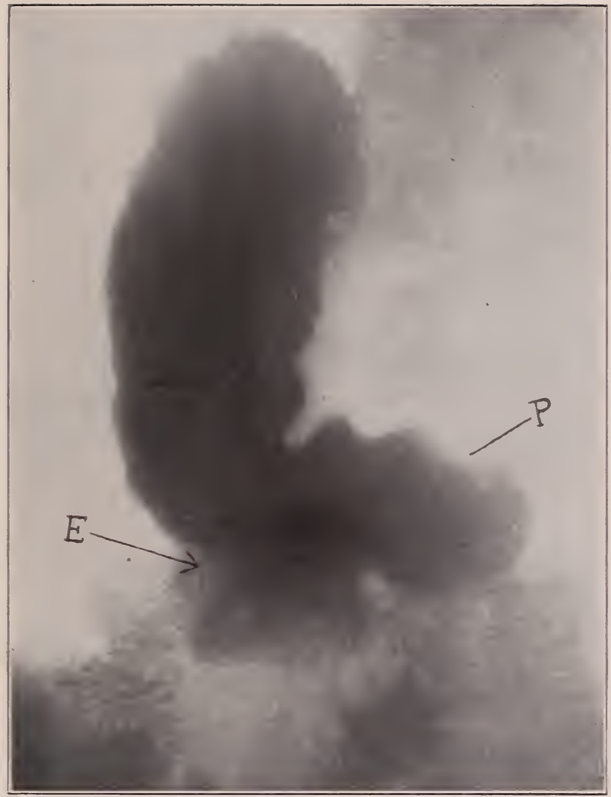
GASTROJEJUNOSTOMY WITH CLOSURE OF THE DUODENUM AND CHOLECYSTOSTOMY.

O. A. Gordon, F.A.C.S.,

Brooklyn-New York.

THE case here reported is considered worthy of record because of the fact that the pylorus having been closed by a simple method remains impervious at the end of sixteen months.

The patient, thirty-nine years old, referred to me by Dr. M. L. Bodkin, had suffered from "indigestion" for about two years. She complained of pain in the epigastric region often associated with nausea and vomiting. The pain was usually relieved by taking food and alkalies. Her vomiting usually occurred about two hours after meals and was as a rule sour and burning. She had on two occasions vomited almost clear blood and had noticed blood in her stools. During the past year she had lost forty pounds. With this classical history and physical and laboratory findings substantiating it, the diagnosis was apparent. She was operated on June 4, 1915. The pathology found at operation was an indurated ulcer just to the gastric side of the pylorus and a gall-bladder containing several calculi. The ulcer was treated by a posterior gastrojejunostomy with exclusion of the pylorus. The gall-bladder was drained after the usual manner. The interest in this case of course centers in the subject of exclusion of the pylorus. The advisability of closure of the duodenum has not been definitely established and advocates of this procedure are not at all agreed as to the most desirable method. In this case the pylorus was closed by the simple method advocated by Berg. A heavy linen purse-



P. Pylorus completely occluded.

E. Newopening in stomach showing a large column of Barium mixture leaving stomach.

Screen examination, with Barium and water, confirms occlusion of pylorus.

string suture was carried around the posterior stomach wall at the pylorus and then tied, thus closing off the duodenum. This closure has remained permanent up to the present. time, a period of sixteen months, as will be shown by the radiographs by Dr. J. G. Williams.

The patient made an uneventful and complete recovery and since operation has gained about fifty pounds in weight and apparently is in perfect health.

ANNUAL MEETING.

The Annual Meeting will be held on January 27, 1917. The President makes the preliminary announcement that the programme will consist of a day of Clinics. The Brooklyn Hospital has placed its wards at the disposal of the Associated Physicians of Long Island for the day, which will be arranged as follows:

BROOKLYN HOSPITAL

Raymond Street and De Kalb Avenue, Brooklyn.

Operative Clinics	9-11 a. m.
Medical and Surgical Conference	11-12:30 a. m.
Annual Meeting	12:30 p. m.
Lunch	1:30 p. m.

Both Surgical and Medical Clinics will be given in the afternoon at hours to be announced later.

Luncheon will be served at the Hospital.

It is earnestly hoped that a large number of the members will avail themselves of this opportunity.

EDITORIAL

MOVIES AND MORALS.

A RECENT number of the Hospital Review calls attention to the effect of the moving picture shows as an evil influence upon home life and declares that any educational influence they exert is more than offset by the disturbance to normal home influence. The article maintains, and we think with justice, that the craving for excitement, which can be so cheaply gratified by attendance at the moving picture shows, is one of the strongest influences at work in modern American life to destroy the home feeling and interfere with serious pursuits. It points out that, instead of providing wholesome intellectual entertainment for children at home, parents are permitting their children to frequent the movies to the exclusion of genuine intellectual pleasures. As this has long been our own feeling, it is a source of gratification to find that others are seeing a menace in the modern tendency to substitute cheap excitement for intellectual improvement.

It was the writer's misfortune not long ago to be so placed that for two weeks the only occupation available during the evenings was attendance at a free open air moving picture show, and if he may judge by the character of the films exhibited, he can affirm that while they were entertaining they were for the most part nothing else. Everyone can recall how in his boyhood he read "Old Sleuth, the Detective" and his impossible doings, on the sly, just as he smoked corn silk cigarettes where he was not likely to be caught at it. The ordinary film play is an insipid and often impossible portrayal of the penny dreadful variety that is unsuited to growing children, inasmuch as it presents situations that are often broad, to put it mildly, and not infrequently indecently suggestive and recall Old Sleuth in more ways than one. One has but to stand near the entrance of any moving picture show during the hours of daylight to be impressed with the character of the crowds that pour out at the close of the show. It is a sad commentary on the American craving for cheap excitement to note the large number of young men and women who fritter away the best hours of daylight in the unwholesome surroundings of the moving picture palace, just as it is a bitter reflection to consider the thousands of well-to-do women who spend their afternoons playing bridge and who seem to be able to converse only in terms of bridge and the most ephemeral sort of literature.

The writer would not be understood as wishing to minimize the possible educational qualities of moving pictures. He realizes perfectly what an immense influence for good they possess, but he is also deeply impressed with the distance that lies between the portrayal of the life and habits of the mosquito and the undressed antics of Annette Kellerman. What may be done to offset this demoralizing influence is by no means clear. In the course of a discussion upon this subject with a brilliant and earnest worker in the social welfare field, the value of the cheap movies to factory girls was painted in glowing colors: "Surely" said this consecrated woman, "no one can question how infinitely better it is for a tired factory hand to spend her own five cents for her own enjoyment than to depend upon her casual male acquaintances for the questionable entertainment afforded by public dance halls and similar places of more than doubtful repute; for such a girl the movies mean everything." Granted that this is true and recognizing that she cannot afford to frequent the movies every night, there nevertheless remains the problem of how the useful and educational value of moving pictures may be retained and enjoyed by the well-to-do without permitting them to drive out all intellectual training and the home spirit, which go hand in hand in the development of character without which the rising generation will grow up blind to the requirements of better citizenship. It is a problem to which every physician should give thoughtful consideration. H. G. W.

A NEGLECTED BRANCH OF MEDICINE.

A FAMOUS general once pointed out that an army is no stronger than its feet. Military surgeons and the surgeons of large bodies of men who are much on their feet, such as policemen and motormen, are keenly alive to the truth of this epigram, but it is very much to be feared that the average physician has failed to grasp the importance of familiarizing himself in a practical way with the problems arising from bad feet.

It has been the custom to regard foot troubles as comprising flat feet, bunions and metatarsalgia and either sending the sufferer to an orthopedic surgeon, or dismissing the case with the advice to procure a pair of plates. Apparently little or no attention is paid to corns, calluses and ingrowing nails, except by the general surgeon who deals with an occasional aggravated case. As a result the chiropodists, who once upon a time were occasional only and classed with manicurists, have begun to appear in increasing numbers and are no longer satisfied to deal with pedal cosmetics, but have established a school and are being trained in the correction of foot deformities. They are giving advice as to proper footwear and not infrequently undertake minor operative work as well.

The importance of recognizing this situation in its bearing on the future must not be underestimated. Physicians have trained the public to feel that the care of corns and calluses, etc., is no part of their work and except as an occasional orthopedist may be found protesting against the unscientific use of indiscriminately applied foot plates and so-called orthopedic shoes, the profession in general is silent on the subject. It is altogether too common to find early cases of arthritis deformans, of osteosarcoma, of tenosynovitis, diagnosticated as rheumatism and dismissed with a prescription for salicylate of soda. If physicians are content to permit these cases to drift into the hands of a chiropodist, they are permitting a grave injustive to their patients, for it is self-evident that thorough diagnostic training cannot be expected of them, and they will permit these conditions to pass unnoticed causing to the patients lasting harm, just as glaucoma and iritis are being daily treated by lenses by optometrists. It is time for the medical schools to awaken to the need of laying more emphasis

upon these lowly but important ailments and impressing upon their students the need for more thorough acquaintance with the practical management of foot troubles.
H. G. W.

DRUG LEGISLATION.

ONE has only to order from the druggist a one per cent solution of cocaine, or something of the sort, or to write a prescription for a cough mixture to have borne in upon him some of the extreme inconsistencies of the present Federal and State statutes covering the sale of drugs. The qualified physician may not even write for *stypticin* for his own use without having to fill out two separate blanks. It is true that stypticin is a remote opium derivative, but as it is never, under any circumstances, used as an opiate but exclusively to control hemorrhage, the ridiculous side of the law becomes apparent, especially when we contrast with it the practical exemption from the working of the law of anyone who wishes to set up in business and sell under a trade name cough mixtures, diarrhoea mixtures, soothing syrups, all containing opium and dependent on it for their effect, and all permitted by the law so long as the transaction is "in good faith." This exemption, nominally in behalf of the purchaser who is supposed to be a competent judge of the preparation which he wishes to purchase and to be qualified to choose wisely whatever he may need for his cough or cold or bellyache, is in reality an expression on the part of the legislature that passed the bill of its recognition of two facts; the impotence of the uncombined and shortsighted doctors and the political influence of the organized drug trade. When it comes to a final analysis it is the nostrum dealers who were able to have their pocketbooks exempted.

It is not only this type of patent medicines that thus receives official recognition, but a variety of alcoholic products as well. There are a great many good people in this country who would as soon drink a glass of sherry or port wine, or permit their children to drink it, as they would put their hands in the fire; but they take without question one of a number of so-called "tonics" that are inconspicuously labeled "18% alcohol" and recommend them to their friends and dose their children with them in apparent ignorance of their identity with sherry. This is the situation that must be met by concerted action on the part of the National and State Medical Societies. If it be fair for the doctor to be taxed and restricted in using the drugs that he is trained to employ, it is equally fair that the patent medicine peddler should be placed under equal if not more rigid restrictions.

Make it your business to keep in touch with your Senator and Representative and let them know that you are interested.
H. G. W.

Notice of Annual Meeting on page 545.

Society Transactions

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of the Society held May 4, 1916.

The President, DR. ROGER DURHAM, in the Chair.

Splenectomy. Specimen.

Wm. B. Brinsmade, M.D.

There have been several things said in the Surgical Society about the desirability of reporting the cases that did not do well. Tonight I have to report some cases of a good deal of interest to us.

The first was a Hindoo seaman who was brought into the hospital, having been taken sick on going aboard ship at Calcutta. There was nobody of his particular caste in the hospital and it was difficult to get any history from him excepting that he had been sick ever since leaving Calcutta.

Physical examination showed the patient to be resting quietly in bed suffering from dyspnea. He had a small bony frame and small muscles, generally lacking in fat and in physical force. The head was negative. The ears were negative. The right pupil was larger than the left. There was considerable pyorrhea present around his few remaining teeth. His neck showed a large number of supraclavicular glands enlarged to the size of a bean. His thorax was negative. His blood-vessels and cardiovascular report were negative. His abdomen showed a liver reaching from the fifth rib to the costal margin. The spleen was palpable for three centimeters and tender. No other organs were palpable. There were no masses or areas of tenderness elsewhere.

A tentative diagnosis was made of Banti's disease or syphilis. The Wassermann, however, was negative. The patient showed marked emaciation. We had then a patient in the physical condition which I have described with a large tumor occupying the region of the spleen. It could not be shifted from left to right or up and down.

During the time that he was in the hospital, from the 8th to the 17th, the spleen (and it was decided that this tumor was the spleen) had increased more than twice in size.

In spite of his physical condition, we decided to operate. His blood analysis showed nothing. His urine was negative. We suspected that this man was suffering from some of the Eastern diseases and that his splenic enlargement was due to that, but there was nothing in any of the reports, and there are over twenty examinations made, on which to make a diagnosis.

We opened the abdomen through the left rectus muscle and came across this enormously enlarged spleen. It was attached to the diaphragm; it was attached to the abdominal wall in front; it was attached to the stomach; and it was attached to the pancreas. It was with considerable difficulty tnat the spleen was isolated sufficiently to get a clamp on it. The veins in this spleen were as large around as my thumb and in the endeavor to bring the spleen up I ruptured one of these veins and I have never seen a more profuse hemorrhage than took place in that case. I succeeded in putting a clamp on it, however, and stopped the hemorrhage and removed the spleen. The patient never recovered from the shock and died about eight or ten hours afterwards.

Pathological report of the spleen (I might say, by the way, that his blood was sterile) showed no organisms merely general fibrosis and congestion.

What was at the bottom of this trouble it is very difficult to say, but apparently he had been suffering from some of the Eastern diseases and the splenic enlargement had taken place when he went aboard ship.

The second case was that of a man 58 years of age. His early history is of no importance. He has been a free drinker, getting drunk on an average of twice a month, uses tobacco frequently and drinks a great deal of beer. For five or six years the patient has been becoming more and more constipated. There has been no flatus. Defecations have been very painful. He had soreness inside of the rectum, but never passed any blood. He has suffered from dyspnea on exertion. No palpation. His chest was markedly enlarged in the anteroposterior diameter, showing an emphysema. The rest of his history is of no immediate importance. The prostate was found to be decidedly enlarged and rough, fairly hard and very tender. His liver edge was not palpable. A half-inch above the navel and to the left, there is a very definite, sharp-edged tumor which rises and changes its position on respiration. It can be held down, however, on deep expiration. This is tender and hard. He had some bleeding from the stomach and food retention, not to a marked degree. An x-ray picture was taken and showed a large tumor which could be taken up in the fingers and moved from side to side, occupying the region of the pylorus.

On opening the abdomen we found that this tumor consisted of a calcareous mass. It is in the jar. Instead of being attached to the stomach, this was a large calcareous retro-peritoneal gland, freely movable in the mesentery, and had been pressing on the pylorus, so as to give the impression of a tumor of the pylorus itself. Part of this was kept for a specimen, and I think that this is about two-thirds of it. Careful examination of the entire intestinal tract showed nothing that we could discover, but in examining the spleen we found an enlarged, hard, white spleen which had all the appearance macroscopically of tuberculosis. Two of the members of this Society happened to be visiting the clinic that morning and after talking with them we agreed the spleen should be removed. After getting the spleen out, which was done without any great difficulty, we found that he was suffering from ordinary splenitis. There is no special pathology in this spleen, as you may see from examination.

This man was a bad physical risk and it was only after his having been in the hospital for fifteen days that it seemed to us that he wasn't going to get well unless something were done for him, so we did this operation, and he got up an acute congestion and edema of the lungs and died twenty-four hours after operation. The pathological report shows calcareous glands and perisplenitis.

I would like to call your attention to the way the staff at Long Island College Hospital is now doing its work. You can see from these various reports made by the interne staff that the cases are very thoroughly worked up before they come to the attention of the surgeon at all.

Two Cases of Acute Cholecystitis.

Wm. B. Brinsmade, M.D.

The next case is one of considerable interest and is such as we run across in an active hospital service from time to time. This patient, a woman, was brought into the hospital early one Sunday morning, on the 9th of April, on the ambulance, complaining of severe pain in the abdomen. Her menstrual period was present. She was vomiting profusely a greenish-yellow fluid containing particles of brown mucus. At that time (8.00 o'clock in the morning) there was no fecal odor to it. On account of her menstrual disorder pelvic examination was made with the expectation of finding the trouble there, but that proved negative. She could not urinate and had to be catheterized and the drawing off of fifteen ounces of normal urine relieved her bladder. At 10:00 o'clock she commenced vomiting brownish fluid containing mucus and small particles. I saw her at 11:50 and at that time she had a basin lying beside her on the bed full of dark brown fluid with a decided fecal odor. She was entirely conscious. The situation was explained to her, but she at first refused operation, and then, after another severe attack of vomiting, as we were leaving the hospital, sent for us and said that she wanted to be operated because she knew she couldn't get well if nothing were done. On opening the abdomen we found, as we had expected, a large distended gall-bladder with a very thin wall. In the attempt to remove the gall-bladder it ruptured and considerable of the bile escaped into the abdomen. The gall-bladder, however, we removed—what there was of it. Later examination showed it to be a streptococcus infection of the gall-bladder. Her entire bile tract was explored without any evidence of stones anywhere. She went the way that almost all my cases of so-called fecal vomiting go—she died in about twenty-four hours. The kidneys shut down and she did not void much urine after the operation.

The next case was a similar case excepting that it was in a fairly well-nourished man who did not have any general peritonitis, but who did have a large gall-bladder. He was a man fifty years of age, whose chief complaint was of pain in the epigastrium.

The family history is negative. He wasn't much of a drinker. He took a few glasses of beer a day, but never got drunk.

General examination showed the patient to be moderately cyanotic. He lies recumbent in bed and there are signs of distress on his face. His neck showed two or three large glands on the left side. His thorax was normal. Heart: Apex beat palpable in the fifth interspace; otherwise, normal.

He was taken sick at 7:30 o'clock in the morning after a history of indigestion and pain in the stomach, with an acute attack and three exacerbations of vomiting. each time following the taking of food.

It was so evidently an acute abdominal condition that we didn't hesitate to advise and insist upon operation. He was operated on later on the day of admission and we found a large, distended gall-bladder with several small areas of whitish degeneration in its wall. With this other case in mind and with the very acute and profound sickness from which this man was suffering, naturally one stopped to think whether he should take the gall-bladder out or drain it. I thought that he was going to go the way the woman had gone, so instead of prolonging the operation, I put a tube in the gall-bladder, fastened it in and drained it. This man also had no stones in his gall-bladder or ducts, and we passed a probe all the way. So we have two cases of cholecystitis without any stones.

No bacteriological examination of this bile was made, I am sorry to say.

The pancreas was negative in this case. The head of the pancreas was easily palpable. He got out of bed the second day after the operation and pulled the drainage tube out of the wound, but it didn't seem to make any difference. They put him back to bed and put another drain in. He is still in the hospital and has made a very good recovery. His temperature and pulse and all his symptoms are satisfactory. The operation was done on April 12th. He is out of bed now.

The interesting thing about these two cases of cholecystitis without stones (one certainly of streptococcus origin and the other of doubtful origin) is that in both cases the gall-bladder was of that very thin variety about ready to rupture and in one case (that of the woman) we lost the patient, not on account of the operation, but on account of her general condition. It has been my experience that this is the class of case which is almost always followed by a lethal exit.

The pertinent question might very well be asked as to why we took out the spleen in these two cases. In this East Indian it seemed as though it was the only thing to do. He had a large peritoneal tumor, which was multiplying in size, and it was getting to be too much for him, rapidly so, and the only thing to do was to do what we could and we took it out and probably made a mistake.

In the other case, that of the man, if we had known we were to find perisplenitis we wouldn't have removed the spleen, but we acted under our best judgment but unquestionably we made a mistake in removing this spleen.

Dr. Mathias Figueira, in opening the discussion, said:

"In the first case of splenitis was there any lesion in the peritoneal cavity or any signs of cirrhosis in the liver?"

By Dr. Wm. B. Brinsmade: "No, sir."

"And in the case of cholecystitis that had fecal vomiting, was there any lesion to account for the fecal vomiting?"

By Dr. Wm. B. Brinsmade: "Localized peritonitis."

Dr. William B. Brinsmade, in closing the discussion, said:

"Before operation this man's blood picture was very thoroughly investigated. I think we have six or seven reports, doctor, with the Eastern diseases in mind, without finding anything positive.

"In this particular case it would have been impossible to introduce a trocar into the bladder because the minute I put a clamp on the cystic artery the gall-bladder ruptured. It was like a piece of wet paper."

Two Unusual Appendix Cases.

Warren S. Simmons, M.D.

It isn't very often that we have anything particularly new about appendicitis. It isn't a new disease by any means. Most of them are acute, chronic, gangrenous or clean or something of that kind, but there is one interesting case that came into my service in the Bushwick Hospital on September 15th, 1914.

There is nothing particularly interesting in the history.

Present Condition: Some pain around the chest and umbilicus, but he still continued to work for three or four days. He was in bed for three days and came in with severe pain all over the epigastric region, complaining of that for a day or so, which had settled down in the right iliac fossa. There was some rigidity of the abdomen. The pain was all referred to the right iliac fossa and there was tenderness in that area.

Operation: The patient was anesthetized and the usual incision made in the right side and an attempt was made to find the large intestine, which was very easily found and extremely easily brought out of the wound. The muscular bands were identified and then traced downwards to find the appendix. That attempt was unsuccessful, so I traced in a manner which seemed to be upward, although I thought it might be downward. That was also unsuccessful so I endeavored to determine where the bands were going to and found that they were going to the rectum, and there were numerous epiploical so I determined it must be in the sigmoid. Then an incision in the left iliac fossa revealed a gangrenous appendix. There was no transposition of the heart or spleen. The liver was in its normal position. None of the other viscera were transposed.

In the second case the removal of the appendix is rather unusual. This case was referred to me by Dr. William Kenny about eight months ago. He asked me to see a child he had delivered that morning with a patent umbilicus and a prolapse of the intestine into the lumen of the umbilicus (cord) for a distance of four or five inches. We succeeded in pushing that back somewhat in the cord and the next day I dissected away the membranes of the cord and in that situation were found two loops of intestine. There was one loop of distinctly small intestine. There was another loop which had the muscular bands on it, meeting in the common point, and at that point there was a little appendix about three-quarters of an inch in length, intensely red and intensely inflamed. That was located and removed with a cautery, the abdominal wall closed and the child made an uneventful recovery.

It seems to me that that is fairly early for the removal of an inflamed appendix. As a matter of fact, a diagnosis of appendicitis was not made.

One might think that that was a Meckel's diverticulum. It wasn't. It wasn't attached to the small intestine, but to the cecum.

A Case of Cholecystitis. Stone.

Warren S. Simmons, M. D.

My other case is one of cholecystitis.

This woman didn't have any particular symptoms that were different from any other case of cholecystitis. She had the pain, nausea, vomiting and tenderness in the upper abdomen with a temperature of 103 4/5 and a pulse of 110.

One of the interesting things about this case to me was that the woman was five feet four inches tall and weighed 368 pounds. It took four men to put her in bed in the hospital. It also took six men to get her out of the house.

An incision was made in the usual region for opening the gall-bladder and, strange to say, by making a very large skin incision, the operation was comparatively easy. On opening the abdomen it was found that the gall-bladder was distended and the upper portion of it was gangrenous, and the interesting thing about the case was the size of the stone. There was but a single stone, practically the shape of the gall-bladder. That is all I have to say about it.

All these three cases got well.

Paper: "The Surgical Staff Conference."

F. E. Adair, M.D., New York Hospital.

Dr. William B. Brinsmade, in opening the discussion, said:

"This whole subject is of a great deal of interest to me. I have been carrying on something along this line in a half-hearted kind of way for several years. During the past year we have had a 'Sunday School' class at Long Island College Hospital on Sunday mornings at 12:00 o'clock, at which time we endeavor to go over the work of the week, somewhat along the line laid down in these charts. We have, however, never made definite reports or assigned any particular work to the different members of the staff in the line of reporting accidents and incidents of the week, and I can see the great possible advantage in a definite system such as has been presented to us.

"There is no question but that something along this line has got to be adopted by every institution in the country because I am informed on credible authority that all the hospitals of the country are to be rated as the medical schools have been rated and that the records are to be an important factor and that the follow-up reports of the condition of the patient are also to be an important factor in rating hospitals as to whether they should be rated Class A, B, C, or lower.

If none of you have carried out a plan of this kind, and will try it out for one week, I am sure that you will take the greatest possible interest in it, especially if you can get the younger men on the staff to feel they are at liberty to discuss cases and ask questions. It has been my experience to have some very embarrassing questions asked me as to why I did certain things and why I didn't do certain things, some of the things which I had been doing for years I found I had been doing without any good reason, with the result that some of them have been dropped as a result of the questions that have been asked. The questions asked and the observations made by the hospital staff are often of a great deal of value. Sometimes I wish I could stand behind the screen in the dining room and hear them talk about me and the work which I am doing because I am sure that the mistakes I have made are very strongly accentuated. I am sure I would gain considerable from it.

"I think that this is an admirable system. It is something which has to be taken up by all of us and the hospital authorities must come to a realization of the fact that it has to be considered a part of the hospital work and they must provide the necessary funds because to carry on such a system as this requires the work of one secretary at least, all the time."

Regular Meeting, June 1, 1916.

The President, DR. ROGER DURHAM, in the Chair.

Gunshot Wound of the Abdomen.

Charles A. Anderson, M.D.

P. G., driver by occupation, seventeen years of age, single, was brought to the Methodist Episcopal Hospital on July 6th, 1915, with a history of having been shot by a policeman. The patient entered the service of Dr. Charles H. Goodrich and was seen by me within an hour following his injury.

The patient was in a semiconscious state and showed evidence of shock.

Physical Examination: The head showed nothing pathological. The chest was symmetrical. Expansion was good and equal on both sides. The heart and lungs were negative.

The abdomen showed a small wound, oozing blood, at a point one inch to the left and two inches above the umbilicus. A similar wound was found in the back about the level of the umbilicus and about one and a half inches to the left of the spine, also oozing blood. The genitalia were negative. The small finger of the right hand showed a laceration of the terminal phalanx and a fracture of the bone.

Operation: The patient was sent to the operating room. A median abdominal incision was made from a half inch below the ensiform to an inch and a half below the umbilicus. The peritoneum was opened. There was no sign of hemorrhage. A slight amount of fluid was in evidence—a mixture of chyme and serum. The stomach was pulled down. A perforated wound of the anterior wall was found near the greater curvature. This was closed with a purse string of No. 2 chromic reinforced with a Lembert suture of Pagenstecher and the posterior wall of the stomach examined and a similar perforation discovered, which was closed as above. The torn omentum was sutured to the posterior stomach wall. The intestines were examined and as the coils were pulled up into the wound a very considerable hemorrhage occurred. The intestines were packed off and a bleeding point in the inferior mesenteric vein was ligated. The intestines were now reviewed and three perforations were discovered in the small gut. These were closed as were the previous wounds. Intestinal varnish was applied.

At this point the patient's condition was such that he was given an infusion of twenty-eight ounces of saline intravenously. The intestines were washed off with saline. The abdominal wall was closed with layer sutures; rubber tube to the pelvis, cigarette drain through the bullet wound, after cleansing with iodine., The wound in the back was treated with iodin and a small gauze drain inserted.

The wound of the finger was treated with iodin.

The patient was put to bed in a serious condition—Fowler position, ice coil to abdomen, morphin sulphate, lavage every six hours, saline per rectum, stimullation as indicated. The temperature, which rose to 102 twelve hours after operation, quickly subsided and ranged from 99 to 100 for sixteen days. The pulse fell to 90 in forty-eight hours and remained there, gradually reaching normal. There was a profuse purulent discharge from the tube, which was gradually shortened, and the tube was removed on the twenty-second day. The patient left the hospital on the fifty-sixth day, recovery complete and the wound healed.

Congenital Cyst of the Kidney.

Charles A. Anderson, M.D.

T. S., fifteen years of age, was referred to me by Dr. W. R. Terry. The patient was admitted to the Methodist Episcopal Hospital, November 26th, 1915. Her general condition was good. There was no history of any previous illness. The patient gives no history of renal or bladder disease. Menstrual history negative; last period fourteen days before admission.

About two months before admission, the patient noticed a small mass in lower abdomen. This mass was about the size and shape of a small orange and moved about freely with change of posture. It never caused pain or discomfort. She thought it had increased in size rather rapidly. The patient feels perfectly well. She has lost neither weight nor strength.

Examination reveals a well-nourished girl apparently in good health. The only abnormality is a firm, smooth mass, about the size of a grape fruit, located at the left iliac region, but it can be moved easily and painlessly to the umbilical, the right or left hypochondrium or *partly* into the *right* iliac region. When this mass was first noticed by her physician it lay in the median line above the symphysis and was suggestive of a pregnant uterus of about three and a half months. Vaginal examination was negative. Urine examination was negative.

A differential diagnosis was made of: ..

1. Ovarian cyst.
2. Tumor of the mesentery.
3. Cyst of the kidney.

Exploratory laparotomy was decided upon.

A four-inch incision was made from the umbilicus to within an inch of the symphysis. On opening the peritoneum a round, smooth, fluctuating mass was exposed, the size of a grape fruit and resembling an ovarian cyst. On further examination this mass was found to be connected with the lower pole of the left kidney. An attempt was made, in order to save all the renal tissue possible, to excise the cyst from the kidney. Upon exerting this maneuver it was found that there was a narrow channel connecting the cyst with the pelvis of the kidney. The mass was delivered through the wound. The renal vessels were clamped and the kidney removed. A stab wound was made in the back of the left side, just below the margin of the ribs. The abdominal wound was closed with layer sutures. Because of the fact that it was found that the peritoneum had been contaminated, we placed her in the Fowler position; also an ice coil on the abdomen.

The patient did well until the fourth day when she developed a temperature of 103.8, pulse 162, respirations 28. The patient looked pale; pulse feeble; abdomen soft; no distention of the lower abdomen, but moderate distention of the stomach. The patient was lavaged and a large quantity of acid fluid obtained. Following the lavage the patient's temperature dropped to 99 and fluctuated from 99 to 100 for forty-eight hours when it reached normal. The pulse, which had been 162, dropped to 90.

The patient made an uneventful recovery from this time on. The drain was removed on the sixth day . The patient went home on the nineteenth day.

The points of special interest in this case were:

1. The extraordinary mobility of the kidney.
2. The apparent attachment of the cyst to the lower pole of the kidney, whereas it was found to involve the entire substance.
3. The ease with which the kidney was removed through the abdominal incision.

4. Although some distribution of the urinous content of the cyst was inevitable, no peritonitis resulted.

5. The intense toxemia which can occur from the hyperacid contents of a moderately-dilated stomach.

Perforated Duodenal Ulcer. Three Cases. Patients.

Carl Fulda, M.D.

C. B., twenty-two years of age, occupation laborer.

Previous History: Two months before admission to the hospital this patient vomited all meals one-half hour after eating. At this time he had to get up at 2:00 a. m. and take food of some kind to stop his epigastric distress. After that period he was well until the day of admission. On that day he had severe epigastric pain and experienced weakness and faint feeling. Four hours later he was admitted and operated two hours subsequent. At the end of an uneventful convalescence he was discharged. He says he has been well since.

J. C., twenty-nine years of age, occupation clerk.

Previous History: The patient says he was well until two years ago. He then had pain several hours after eating, followed by belching and eructations of sour material. At times he has had pain in the epigastrium which was accompanied by vomiting of blood. On April 22nd, 1915, he had an attack of that kind and was operated upon eight hours later for perforating ulcer of the duodenum.

S. P., twenty-five years of age, occupation painter.

Previous History: Absolutely negative. The patient stoutly maintains that he "never was sick in his life," and that he never had any disturbance of digestion of any kind. On March 30th, 1916, he was suddenly seized with intense epigastric pain. He was nauseated and prostrated. He was admitted to the hospital and operated at once. His convalescence was delayed by a suppurative parotitis. Aside from that he made an uneventful recovery.

Although these cases vary so much in their previous history, their condition on admission was much the same. A moderate rise in temperature and pulse and respirations more rapid were accompanied by severe epigastric pain. Tenderness in the upper part of the abdomen was marked and most intense over the region of the pylorus. An average leucocytosis of 14,000 was noted.

At operation the conditions found varied only in minor details. On opening the peritoneum there was the familiar puff of gas. More or less escaped intestinal contents were present and were confined to the vicinity of the perforation. The latter was generally small; only once did it reach the size of a dime. The surrounding induration was always of considerable extent and was of longer standing than the length of time since the perforation. After sponging dry, the ulcer was inverted with interrupted paraffin silk sutures, without regard to the amount of narrowing that the gut might suffer. Gastroenterostomy was not considered. A small strip of gauze was led to the point of perforation and the wound closed.

After operation proctodysis of plain water or 5 per cent glucose was given. Fluids were allowed by mouth at the end of twenty-four hours, and soft diet after three or four days.

In regard to the inversion and subsequent obstruction it is to be added that no subsequent difficulty was noted. In the last case, in which the induration was very extensive and the inverted area large, x-ray pictures showed a normal picture a month after operation.

Dr. Richard W. Westbrook, in opening the discussion, said:

"I have been interested in the case without any symptoms before operation. I have seen several such cases and although it is generally supposed that cases which perforate are chronic cases, usually with a history of symptoms developing within a day or two before the final perforation, still I have had several cases in young men about this age who have been brought into the hospital, having gone to work in the morning and operated on before night, where the cases developed about as this has and where I obtained no history whatever of digestive trouble beforehand. I am satisfied in my own mind that a certain percentage of cases of acute perforation of duodenal ulcer are acute ulcers. A case operated on, which I can recall, about a year and a half ago, could give me absolutely no trace of stomach symptoms of any kind before the morning when his perforation occurred. It has been in my mind to look up several other histories where we got just about the same story, to see if we could not come to a definite conclusion as to whether the history was absolutely correct or not."

Dr. Carl Fulda, in closing the discussion, said:

"The few cases I have shown here tonight were all ward cases. Of the other cases that I have seen two were private cases. One of them perforated after two weeks' care in the medical service.

"I have had twenty-six cases in five years, twenty-five of them males and one female. All cases had considerable induration. I have never seen a case without at least one inch of callus, hard induration, around the perforation.

"The pain which Dr. Sullivan speaks of is brought about only when the ulcer approaches the peritoneal surface. It is recognized that an ulcer which is confined to the mucous membrane causes very little pain. It is only when it penetrates the muscularis and approaches the serosa that we get pain, and I take that pain to be due to peritoneal irritation."

Persistent Pain in the Lower Right Quadrant of the Abdomen, Following An Uncomplicated Appendectomy.

Frederick W. Wunderlich, M.D.

R. W., age 22, nativity U. S., seamstress, was admitted to St. Peter's Hospital, March 26th, 1916.

Family History: Negative.

Previous History: She had no serious disease, except an attack of appendicitis, for which an appendectomy was done October 24th, 1914, at St. Peter's Hospital. It was a clean case. Recovery was uneventful, except that she complained of pain longer than is usual, and was discharged November 10th, 1914. She states that a short time after she had returned to her home the pain became more severe and she had to remain in bed for several weeks. The pain gradually subsided, but she has had several attacks subsequently. Her menstruation has been regular and free from pain. However, after it has passed, the pain frequently has been more severe. During several weeks before entering the hospital the pain had been more severe, causing her to remain in bed most of the time. Her appetite had been poor and she felt weak.

She came to St. Peter's Hospital to have an explorative laparotomy done to ascertain the cause of her pain and to remove it if possible. She was not very robust, but was fairly well nourished. Heart and lungs normal. The kidneys acted well. Her appetite was poor, probably owing to lack of exercise. She had a tendency to constipation. Temperature 98.4; pulse 80. She complained of pain in the ileocecal region, but palpation and moderate pressure apparently did not cause much pain. The cicatrix of the first operation was in good condition and firm.

For the explorative operation the incision was made farther to the median line, through the rectus muscle. No adhesions were encountered; the cicatrix of the appendix was smooth and free; the uterus, tubes and ovaries were normal and in good position; the intestines were in normal position and healthy. The only cause for the pain which could be discovered was a thin membrane covering the cecum. This was dissected off and the wound closed. The recovery of the patient was uneventful. After the sutures had been removed, she declared herself entirely free from pain and remained free from pain until she was discharged from St. Peter's Hospital, much stronger and in good health, April 13th, 1916.

Sarcoma of the Mesenteric Glands.

Frederick W. Wunderlich, M.D.

R. E., age 7, nativity U. S., was admitted to St. Peter's Hospital March 9th, 1916.

Family History: The father was a heavy drinker and died of nephritis at the age of thirty-five years. The mother is alive, but is debilitated, and at times has edema of the face and ankles. As far as can be ascertained, no cases of malignant disease or tuberculosis have occurred in the family of the father or of the mother.

Pevious History: The patient had an attack of gastro-enteritis at the age of three months, and has had more or less trouble with his intestinal tract ever since. He had measles as a young child. His bowels were generally regular, but his appetite was very capricious, and the food did not seem to nourish him properly. At all times there was great tendency to distention of the abdomen. The mother could prevent this if she gave him oranges three times a week. He wets the bed every night and the urine causes a reddish, orange-colored mark on the bed clothes. He has been a weak and debilitated child since birth.

About three weeks before admission to the hospital he contracted a cold, had high fever every night, coughed, had no desire for food, and was constipated for eight days, until his bowels were moved with great difficulty, by a glycerine suppository. Later, his eyelids puffed up. His general condition remained about the same until he was admitted to St. Peter's Hospital. At that time his general condition was bad. He had a cachectic, waxy complexion, was pale and emaciated, but the abdomen was very much distended. Below the liver a hard mass could be felt and fluid was present. Owing to the very great distention of the stomach and intestines with gas, the examination of the abdomen was difficult and unsatisfactory.

He was admitted to the medical side and later transferred to the surgical side. Castor oil overcame the tendency to constipation, and with regular evacuations of the bowels, there was an improvement in his general condition; the fever and cough abated; he developed a ravenous desire for food and consumed it eagerly, but did not derive much benefit from it; there was no corresponding increase of weight and strength; much of the food passed through undigested. Apparently he did not have much pain and when the stomach and intestines were not distended with gas, he seemed to feel comfortable.

Gradually the distention of the abdomen increased and edema of the scrotum developed March 20th; cotton saturated with glycerine was applied to the scrotum on the 21st, 22nd and 23rd, but did not give any relief. On the twenty-fourth dry heat was applied by means of a strong electric lamp with a parabolic reflector, three times a day, for twenty minutes. This treatment reduced the edema of the scrotum in two days. The distention of the abdomen increased and interfered with the respiration and action of the heart so much that it became necessary to tap the abdomen, which was done on March 27th. However, only about four ounces of a thick milky fluid were evacuated and did not bring much relief to the patient. It was, therefore, decided to make an explorative incision, in order to evacuate such fluid as could not be drawn off with a trocar.

On March 31st an explorative incision was made. Some thick fluid was evacuated. Apparently there was no disease of the stomach or intestines, but the mesenteric glands were enormously swollen and so many involved that only a small gland was excised for microscopic examination and the abdomen closed. For forty-eight hours the child seemed somewhat relieved; he had a desire for food and took it, but could not retain it. Later, he had so much pain that morphin had to be administered to relieve it. He gradually failed and died April 7th at 1:00 a. m.

I regret very much that it was impossible to obtain permission to make a post-mortem examination and feel that without it, the history of the case is incomplete. When the child was admitted to St. Peter's Hospital the tentative diagnosis of tuberculosis of the mesenteric glands was made; owing to the very rapid growth of the mass, it became apparent that a more malignant type of disease was present, and the diagnosis was changed to sarcoma. Sarcoma is almost the only form of malignant tumor found in children. It is not as frequent in children as in adults, but is more malignant and is very apt to grow rapidly and to recur after operation. Males are more frequently affected than females. Microscopic examination proved it to be a round-celled sarcoma, the most malignant form of sarcoma.

Notice of Annual Meeting on page 545.

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

OCTOBER, 1916

MEDICAL SOCIETY OF THE COUNTY OF KINGS, STATED MEETING, NOV. 21, 1916.

The President, Dr. Ralph H. Pomeroy, in the chair. There were about 400 present. The meeting was called to order at 8.55 p. m., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Wm. Thos. Allen, 676 Park Pl.; P. & S., N. Y., 1900; proposed by A. E. Shipley; seconded T. B. Hegeman; Mar. '16.

Samuel Goldman, 152 Hart St.; P. & S., N. Y., 1912; proposed by E. E. Cornwall; seconded by Membership Committee; Oct., '16.

Augustus L. Harris, 458 E. Parkway; L. I. C. H., 1914; proposed by Membership Committee; seconded by Membership Committee, Oct., '16.

Douglas B. Parker, 154 Clinton St.; L. I. C. H., 1912; proposed by D. M. Gildersleeve; seconded by C. P. Gildersleeve; Oct. '16.

Erasmus A. Pond, 1087 Dean St.; Bellevue, 1890; proposed by W. H. Steers; seconded by J. R. Taylor; Apr., '16.

Hans Siveke, Foot of Jay St.; Univ. Mich., 1913; proposed by Membership Committee; seconded by Membership Committee; Oct., '16.

Alec N. Thomson, 835 Park Place; L. I. C. H., 1905; proposed by J. H. Long; seconded by S. J. McNamara; May, '16.

Frederick G. Weygandt, 647 Bedford Ave.; P. & S., N. Y., 1901; proposed by S. C. Blaisdell; seconded by Membership Committee; Mar., '15.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Anna C. De la Motte, 70 So. 10th St.; Cornell, 1900; proposed by C. E. Scofield; seconded by E. E. Cornwall; Apr., '16.

Wm. H. Donnelly, 178 Woodruff Ave.; McGill, 1903; proposed by S. J. McNamara; seconded by Membership Committee; Mar., '16.

Lamont H. Fisher, 1112 Dean St.; Univ. & Bell., 1916; proposed by J. J. Wagner; seconded by H. T. Peck; Mar., '16.

S. Lloyd Fisher, 2911 Clarendon Road; Jefferson, 1907; proposed by S. J. McNamara; seconded by Membership Committee; Mar., '16.

Philip Leibowitz, 1246 St. John's Pl.; L. I. C. H., 1913; proposed by C. W. Stickle; seconded by M. Lederer; Feb., '16.

Chas. V. O'Brien, 1560 73d St.; Syracuse, 1909; proposed by D. A. McAteer; seconded by J. J. Delany; Mar., '16.

Geo. A. Sheehan, 22 First Pl.; Fordham, 1913; proposed by J. S. Sheehey; seconded by Membership Committee; Dec., '15.

Nathan P. Thayer, 1433 Avenue H., Harvard, 1905; proposed by E. Bishop; seconded by N. T. Beers; Jan., '16.

Applications for Membership.

Applications for membership were received from the following:

Louis A. Feldman, 321 Wyona St.; Univ. & Bell., 1914; proposed by I. D. Kruskal; seconded by L. S. Schwartz; Nov., '16.

George Kornfeld 1016 E. 13th St.; Cornell, 1913; proposed by I. D. Kruskal; seconded by L. S. Schwartz; Nov., '16.

Scientific Session.

Paper: "Thirty-five Operations for Gastro Intestinal Stasis. Methods Used and Results Obtained." (Illustrated by lantern slides.) By Henry F. Graham, M.D.

Discussed by Dudley D. Roberts, M.D.

Address: "Compulsory Health Insurance—A Constructive and Critical Review."
By Samuel J. Kopetsky, M.D.,
Chairman Committee on Medical Economics of The Medical Society of the State of New York.

Discussed by Christian F. J. Laase, M.D., Member New York County Medical Society; President Federation of Medical Economic Leagues.
Emil Altman, M.D., William J. McAveney, M.D., Henry G. Webster, M.D., George Everson, M.D., Henry F. Graham, M.D., William F. Campbell, M.D.

It was moved, seconded and carried, that the Society extend a vote of thanks to Dr. Kopetsky for his address.

It was moved by Dr. Bartley and seconded, that the Society approve Dr. Kopetsky's effort to safe-guard the medical profession and approve his principles as presented tonight. Moved, seconded and carried, that this motion be laid on the table.

Dr. Henry A. Fairbairn presented the following resolutions on the death of Dr. John A. McCorkle:

It is with deep regret that we record the death of John A. McCorkle, M.D. As President, he served this Society in 1884 and 1885. For its support and that of the Library and building he gave bountifully of his funds. He stood forth in an exemplary manner, as the supporter of its ideals and those of the profession of medicine. He was known to the world as an educator of distinction and a philanthropist. His influence as such, has gone throughout the land and our city in which he dwelt and will ever keep him a living force among us.

It is altogether fitting, therefore, that we make permanent record of our deep appreciation of such a life, for it parallels our foundation and ideals.

H. A. Fairbairn,
Committee.

Moved, seconded and carried, that this report be received, spread on the minutes, and that the committee be discharged with thanks.

The following Second Report of the Committee on Improving the Condition of the Library of the Medical Society of the County of Kings was presented by Dr. Polak, but not read:

SECOND REPORT OF THE COMMITTEE ON IMPROVING THE CONDITION OF THE LIBRARY OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Pursuant to the Resolution adopted by the Council at its meeting, held April 12, 1916, the Committee on Improving the Condition of the Library printed its Report and mailed a copy to each member of the Society accompanied by the following letter and addressed return postal card:

Medical Society of the County of Kings
1313 Bedford Avenue, Brooklyn, N. Y.
May 15th, 1916.

Fellow Member:

Herewith we are mailing you a copy of the Report of the Committee on Improving the Condition of the Library.

We direct your particular attention to pages 7 and 8, pages 11 to 16 inclusive, and Appendix F on page 23. The facts therein presented should receive your especial attention and careful consideration.

We desire an expression of opinion from every member of the Society on the following questions:

1. Do you believe that the medical interests of Brooklyn would be better conserved if the maintenance of the Library and building was carried on by an absolutely independent incorporated body (such as an academy of medicine) rather than by the County Medical Society?

2. If such an organization could be formed, adequately financed and endowed, is it your opinion that the County Society would do well to lease or otherwise entrust to such an organization its present plant and Library, thus making possible a large reduction in the annual dues of the County Society?

3. If the Library and building were supported by a Long Island Academy of Medicine, adequately financed and endowed, do you think you would be willing to be a Fellow of the Academy with annual dues of $20? Combined State and County Society dues would be about $5 or $6 if the County Society did not have to carry on the Library building.

It is understood that your replies to these three questions are in no way binding on you. We desire simply to get the sentiment of every member of the Society and this seems to be the simplest and most direct way to do so. Please aid us by answering the questions, "Yes," "No," or "Undecided," on the enclosed postal card, signing and mailing same.

A detailed expression of your opinion or suggestions from you will be welcomed, but at least help us by returning filled out postal card.

Fraternally yours,
Burton Harris,
Chairman.
John O. Polak,
James M. Winfield,
Albert M. Judd,
John E. Jennings,
Committee.

Up to Aug. 1, 1916, a period of two and one-half months after mailing, 253 replies, out of a membership of 900, had been received on the addressed return postal cards.

On Aug. 10, 1916, the President of the Society, Dr. Pomeroy, addressed a personal signed letter to each member of the Society which contained the following further appeal:

I. Before the last formal meeting in May, a well-weighted and conclusive report issued from the Committee on Improving the Condition of the Library and was distributed by mail to all members of the Society.

Accompanying this communication was a request for an individual expression of opinion easily to be indicated on a postal printed and provided. Three months have passed; only 250 replies have been received from our 900 members; and returns have practically ceased to come in. While the Committee hesitates to interpret this as indicating collective indifference on the part of two-thirds of our membership, your President does not hesitate to interpret it as indicating definite carelessness on the part of an astonishing number of individual members.

Those who have not yet replied will find herewith a second postal. Why not help the Committee and your executive Council? Do it now.

From this follow up, 152 postal replies were received, making a total number of replies received to date 405, or forty-five per cent of the members of the Society.

The replies have been carefully tabulated as received and the various percentage ratios have fluctuated but slightly.

Of the 405 signed replies received, the following is the tabulated result:

Question I. Do you believe that the medical interests of Brooklyn would be better conserved if the maintenance of the Library and building was carried on by an absolutely independent incorporated body (such as an academy of medicine) rather than by the County Medical Society?

Answer	Number	Percentage	On basis of 900 total membership
Yes	252	62.2	560
No	109	26.9	242
Undecided	41	10.1	91

Unanswered ...	3	.8	7

QUESTION II. If such an organization could be formed, *adequately financed and endowed,* is it your opinion that the County Society would do well to lease or otherwise entrust to such an organization its present plant and Library, thus making possible a large reduction in the annual dues of the County Society?

Answer	Number	Percentage	On basis of 900 total membership
Yes	273	67.4	607
No	92	22.7	204
Undecided	36	8.9	80
Unanswered ...	4	1.	9

QUESTION III. If the Library and building were supported by a Long Island Academy of Medicine, adequately financed and endowed, do you think you would be willing to be a Fellow of the Academy with annual dues of $20?

Answer	Number	Percentage	On basis of 900 total membership
Yes	173	42.7	384
No	117	28.9	260
Undecided	108	26.7	240
Unanswered ...	7	1.7	16

From this preliminary canvass of the opinions of the members of the Society several deductions may be drawn.

From the fact that two appeals elicited a response from less than half (45%) of the members as to their opinions on these questions of great importance, the Committee feels justified in our original Conclusion No. 11 in which we stated that "Based upon past experience, the outlook that the Medical Society of the County of Kings can or will raise the necessary funds is not promising."

If it "is the sentiment of the members of the Society that they desire to carry on the work in the manner in which it should be carried on and bend their individual and collective energies to this end, even with increased dues if necessary," our labors to elicit an expression of this sentiment have not demonstrated that such a sentiment exists on the part of a majority of the members. One gentleman, an ex-President, replies to Question 1: "By no means. The Library is the glory of the Society. If the Society bestirs itself all will be well." IF—and bestirs itself ENOUGH.

Sixty-two per cent of replies received are in the affirmative as to Question 1 and 67 per cent as to Question 2. About 42 per cent have stated in effect that they will pay $20 annual dues in support of an adequately financed and endowed Library.

To sum up, if we rely on percentages, we have learned that one-half of the members are too apathetic to even reply to our questions. The majority believe in the affirmative as to Questions 1 and 2. About 400 members would pay annual dues of $20 in an Academy of Medicine. This last, if dependable, gives us something concrete to work upon.

Your Committee believes that it is evident that the Society on its own volition is not going to bestir itself. The bestirring element must be a small group of earnest and determined men, who will interest themselves to the extent of formulating a concrete plan, securing the pledge of adequate financial backing, and then presenting the whole matter for final consideration and action. Such a group or Committee should be given time to perfect their plans and the personnel should be carefully selected after weighing the fitness, unity of purpose, and expressed willingness of each individual to cooperate in carrying out the task intrusted.

The following proposed changes in the By-Laws were read:

Dr. Earl H. Mayne reported that the Visiting Committee by unanimous vote recommended that Section 9 of Chapter 20 of the By-laws of the Medical Society of the County of Kings which reads as follows: "It shall be the duty of the Visiting Committee to visit the sick, infirm or invalid members of the Society" to be changed to read: "It shall be the duty of the Visiting Committee to visit and organize relief for the sick, infirm or invalided members of the medical profession resident in the County of Kings."

Dr. James M. Winfield offered the following amendment to the By-laws. "Any member who, from infirmity, finds it difficult to meet the Society's obligations may, if he so expresses his desire to the Council be continued from year to year as an active member without payment of dues."

Nominations.

Nominations for officers and delegates for the ensuing year were made as follows:

For President: Dr. Ralph H. Pomeroy; proposed by Dr. Polak; seconded by Dr. McClelland. Nomination declined by Dr. Pomeroy.

For President: Albert M. Judd.

For Vice-President: Frederick C. Holden.

For Secretary: Chas. E. Scofield.

For Asso. Secretary: Lewis P. Addoms.

For Treasurer: Stephen H. Lutz.

For Asso. Treasurer: Robert L. Moorhead.

For Directing Librarian: William Browning.

For Trustee: Ralph H. Pomeroy.

For Five Censors: John G. Williams, John E. Jennings, Simon R. Blatteis, O. Paul Humpstone, Charles Eastmond, Frank H. Knight.

For twelve Delegates to the State Society, 1917-18: William F. Campbell, Chas. E. Scofield, James C. Hancock, John O. Polak, William Linder, Burton Harris, John C. MacEvitt, Sylvester J. McNamara, Claude G. Crane, Robert F. Barber, Thurston H. Dexter, Elias H. Bartley, John J. Sheehey, William B. Brader.

Moved, seconded and carried that the Council appoint the alternates.

Meeting adjourned at 11:35 p. m.

CHAS. E. SCOFIELD,
Secretary.